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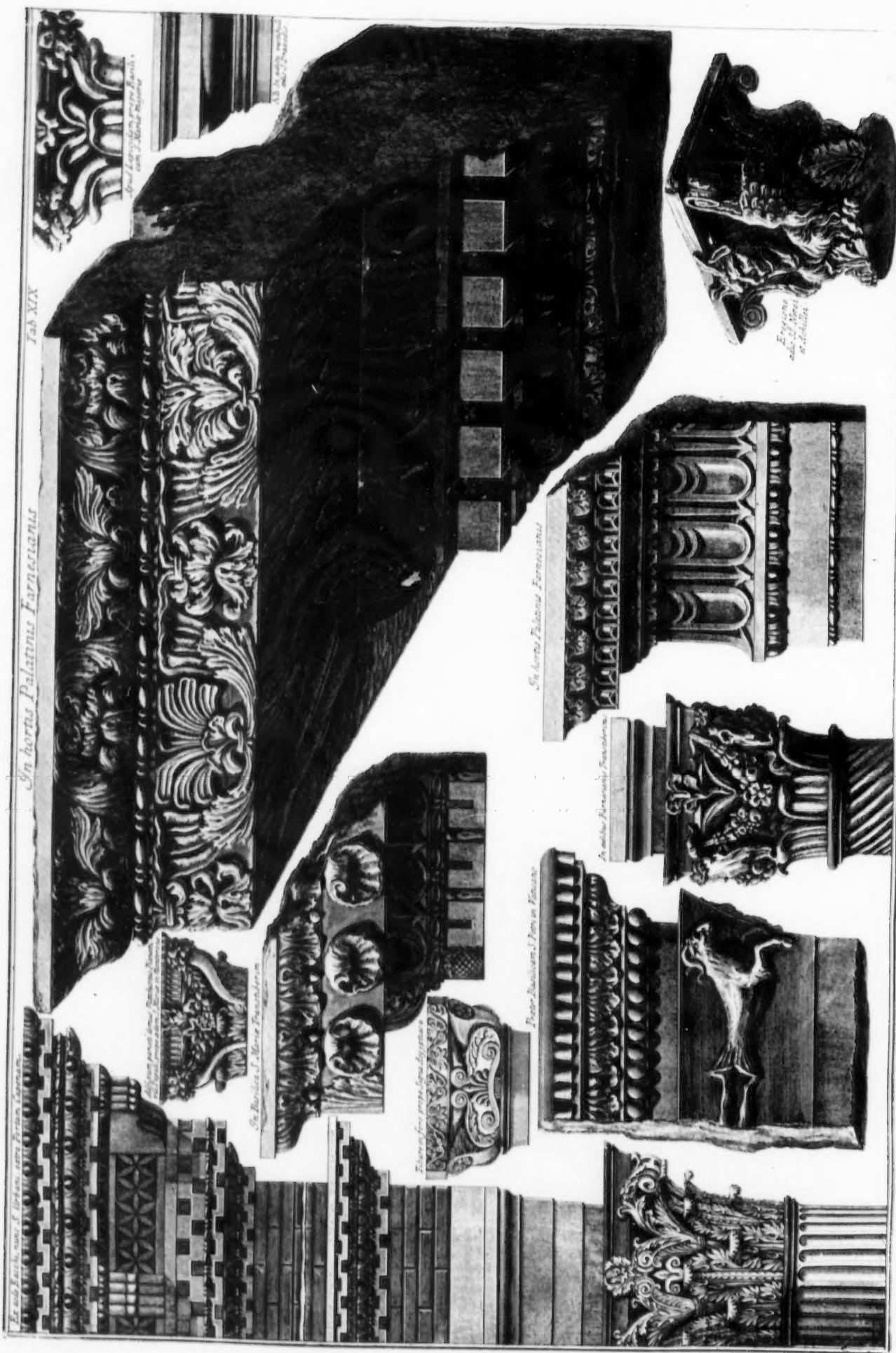
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ARCHITECTURAL DETAILS FROM ANCIENT ROMAN BUILDINGS. GIOVANNI BATTISTA PIRANESI, DEL.

# THE BRICKBUILDER

VOL. 18 NO. 3

DEVOTED TO THE INTERESTS OF ARCHITECTURE IN MATERIALS OF CLAY

MARCH 1909

## Gymnasiums—Their Plan and Equipment—II.

BY M. B. REACH.

THE university, preparatory school, high school, and Y.M.C.A. combine with their scheme of educational gymnastics, free recreative work and athletics. It is with the latter particularly that we are more apt to find conflict with gymnasium work and a certain amount of "give and take" made necessary. In most universities and preparatory schools, as well as high schools, gymnasium work is recognized as a feature of the regular curriculum and is compulsory. Athletics, while voluntary, form an important factor in student life, and as probably no other department of the institution is so effective in promoting that *esprit de corps* that pervades the student body of to-day, athletics must be accepted at their full value and every means offered to properly promote and care for their development. Comparatively few of the student body to any great extent indulge in indoor athletics, however; their physical training comes in the more prosaic gymnasium work, and the welfare of the majority should not be unnecessarily encroached upon. Experience would seem to prove that a majority of gymnasiums planned to-day are entirely insufficient in their accommodation of work demanded. This criticism is made with gymnasium work only in mind. The added feature of athletics emphasizes the need and it is reasonable to suppose that time will increase it. Physical training is becoming more and more a factor in educational life.

I believe that the most practical scheme (and that which is most practical is always best) is a separation of the two features. I hold this as more especially true in college work. One of our newest university gymnasiums now in process of construction has a gymnasium floor approximately 70 by 100 feet and in juxtaposition thereto an indoor "athletic field" 140 feet wide, 190 feet long, with banked track and dirt floor. I recall a state normal school gymnasium where two floors are given over to gymnastic and athletic work. The building was approximately 210 feet long, 70 feet wide; the lower room had a ceiling height of about 17 feet, the upper room having gabled roof with trusses about 20 feet from floor. Various indoor games were played in the lower room, which was otherwise free from apparatus, and regular gymnastics carried on in the upper room. Arrangements such as these create ideal conditions in the matter of equipment and also in the general scheme of work; one department does not interfere with another and the separate work of each is carried on to the best advantage.

Lack of space and the fact that our currency is not always as elastic as our wishes would direct, compel, in a

majority of cases that one room serve dual purposes. It is with that type I will deal as applied to colleges and preparatory schools.

The estimated amount of space required per capita in drill or mass work is placed varying from 35 to 50 square feet. Obviously an architect should know prior to drafting plans what his maximum working plant must be. There is a certain minimum he should not go below anyway and congestion must be avoided if he is to make his plant adequate to its needs. It would be safe to estimate on the larger number of square feet above given in applying his rule. Class work in gymnasiums is constantly expanding. One college director recently informed the writer that he aimed ultimately to handle 300 on his floor simultaneously. Accepting that figure as a basis we find that his gymnasium should contain 15,000 square feet (which it doesn't). Applying the rule that I outlined in the original pages of this article, the room would measure 100 by 150 feet. I will, however, prove that rule by establishing an exception in the case of an exceptionally large plant. I believe when the width of the room has reached 80 feet and the length exceeds 120 feet the additional space can well be added to the length; that 80 by 190 feet is a better size gymnasium than 100 by 150 feet. Particularly where athletics and gymnastics are combined, different work at opposite ends of room would be the more isolated. Allowing for a running track of from 8 feet to 10 feet wide it establishes a width suitable for the most popular of gymnasium games — basket ball — and would comfortably provide for three courts; from the athletic standpoint it would offer opportunity for 60 yard dashes and give a longer "straight away" on the track, and allow generally for a better arrangement of events.

Following is a typical equipment for a gymnasium of the above character: Twenty-four chest machines, twenty-four bar stalls, twenty-four bar stall benches, six vaulting horses, six vaulting bucks, six parallel bars, six pairs jumping standards, twelve jump boards, six horizontal and vaulting bars, twelve climbing ropes, six pairs flying rings, ten traveling rings, one incline board, six spring boards, six adjustable ladders, mattresses, three pairs basket ball backstops.

Fig. 6 illustrates a gymnasium of size specified with equipment in place. This equipment is not a complete assortment of required apparatus in any sense of the word. There are numerous individual pieces, regular and special, to be included, and much in the line of small



miscellaneous material. The items shown, however, are the groundwork of the gymnasium — apparatus that is used collectively by "squads" or "classes." I show

permits of larger squads as several may be engaged at the same time.

Working on a unit basis of six it is desirable to pre-

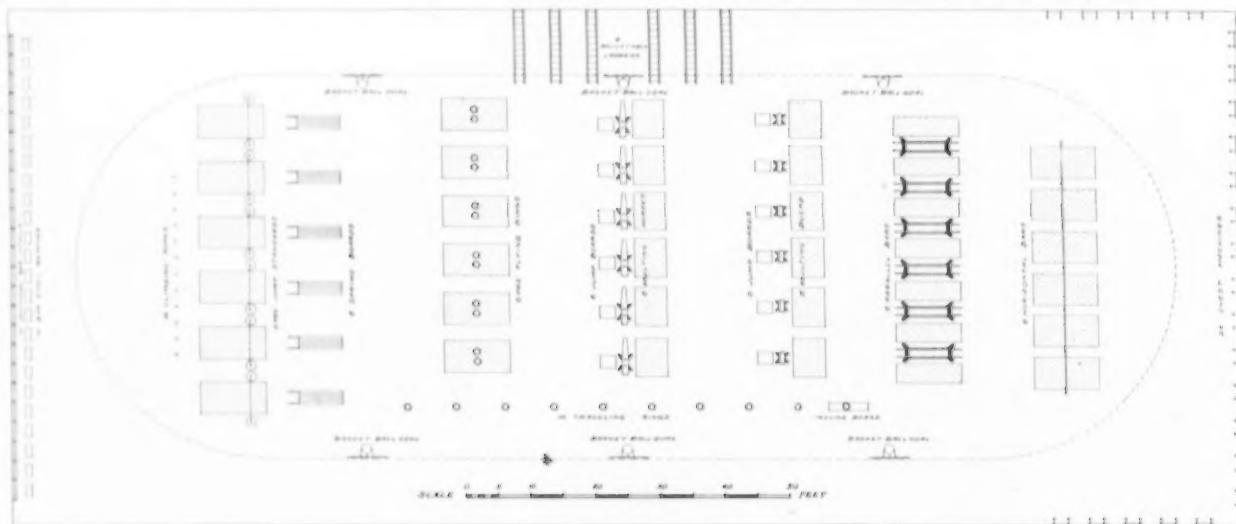


FIG. 6.

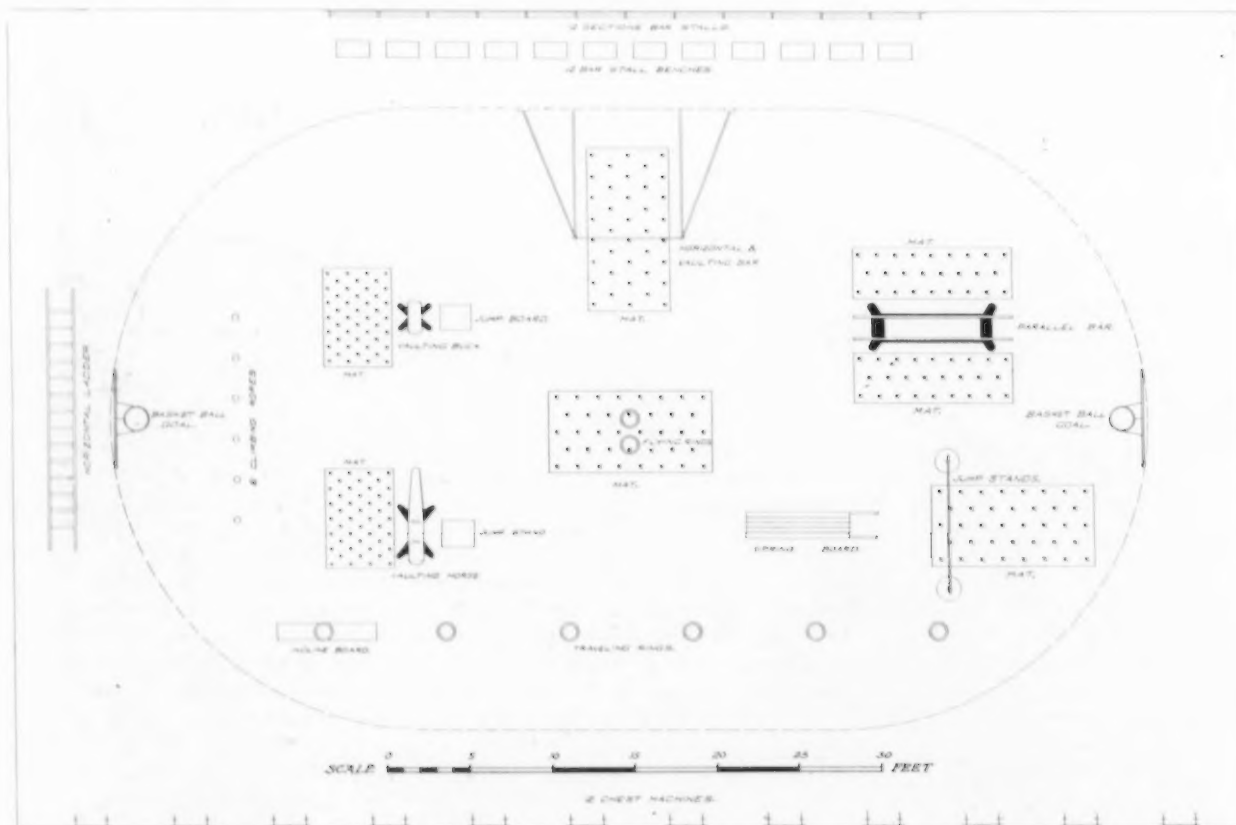


FIG. 7.

this to denote the relative space required in the use of different pieces — (being drawn to scale).

Classes are sub-divided into "units." The average working "unit" on most apparatus is six. It is not desirable to work too many, particularly on slow exercises as it allows the last man to get "cold," and is correspondingly harder to hold his interest. Ladder work

serve this multiple in providing individual pieces, such as chest weights and bar stalls, exercises on which take time because they run in series and it would cause confusion in class work if, say two units of six each were taken off horse work and sent to chest machines, of which there were only ten. In providing for apparatus of this class it may be assumed that as a rule twelve would be the



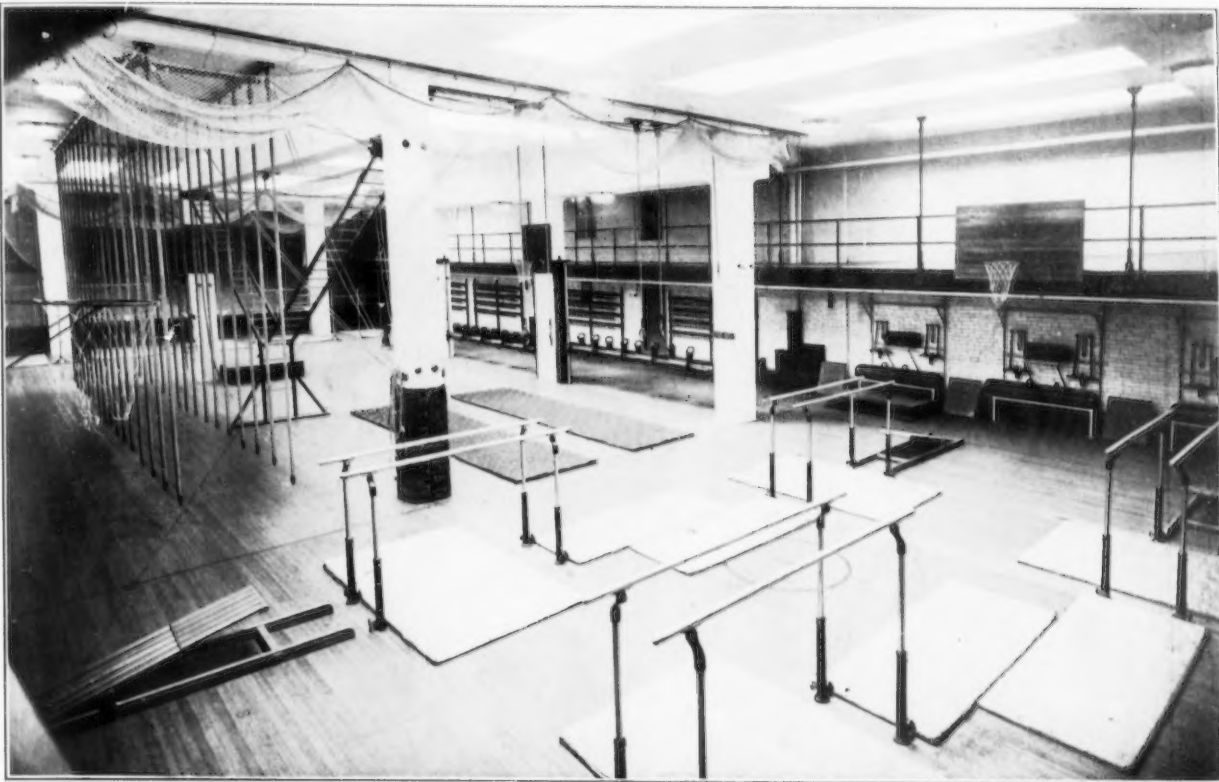


FIG. 8. A HIGH SCHOOL GYMNASIUM.

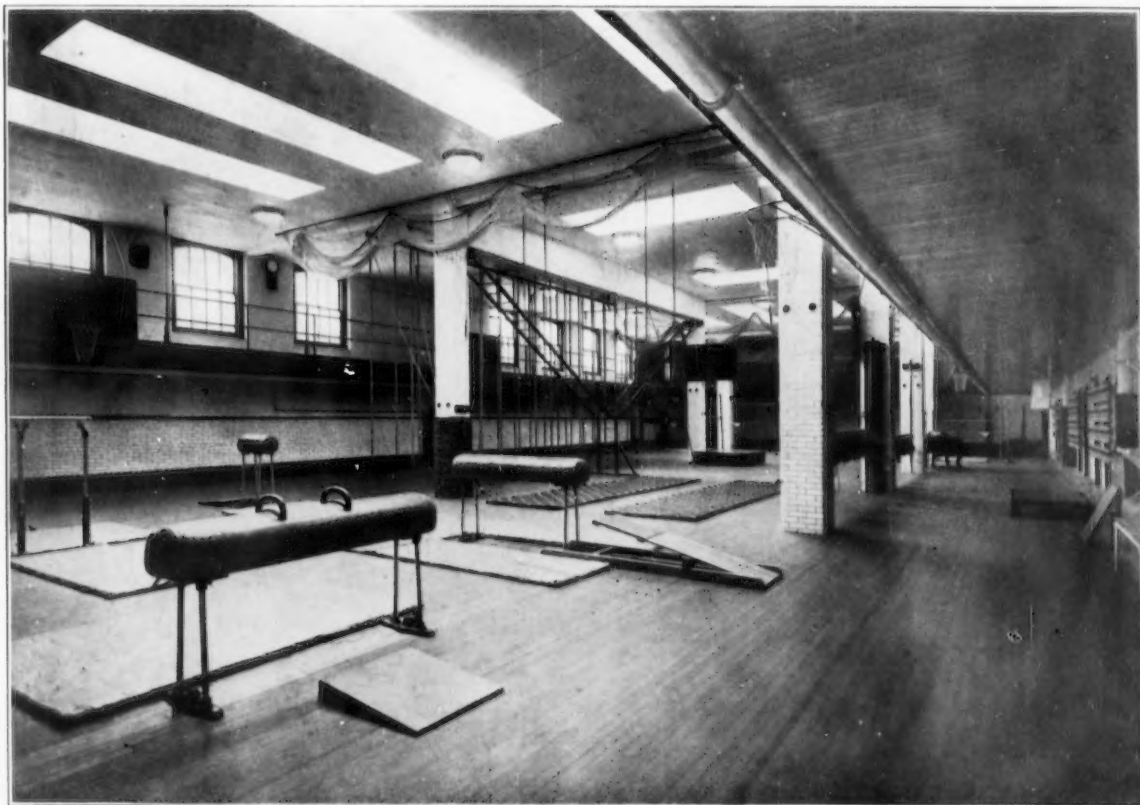


FIG. 9. A HIGH SCHOOL GYMNASIUM.

minimum number installed, twenty-four the maximum. Chest machines scale five feet on centers; bar stalls three feet. The latter are best installed in one section without interstices between uprights and wall space should be provided accordingly. If provisions are made for these class groups the individual pieces will easily find their places. It would greatly facilitate erection of apparatus, save expense, and produce better results if wall boards were fitted in walls when constructed. They should be four feet ten inches high on center for chest weights, and seven feet nine inches high on center for bar stalls.

parallel bar, one pair jumping standards, two jump boards, one horizontal and vaulting bar, six climbing ropes, one pair flying rings, six traveling rings, one spring board, one horizontal ladder, mattresses, one pair basket ball backstops.

Figs. 8 and 9 show interior views of a high school gymnasium that presented problems to the manufacturer of apparatus. It was very necessary to get the maximum amount of work in comparatively limited floor space.

It will be noted that parallel bars, vaulting horses, and vaulting bucks are set into sockets anchored flush in the

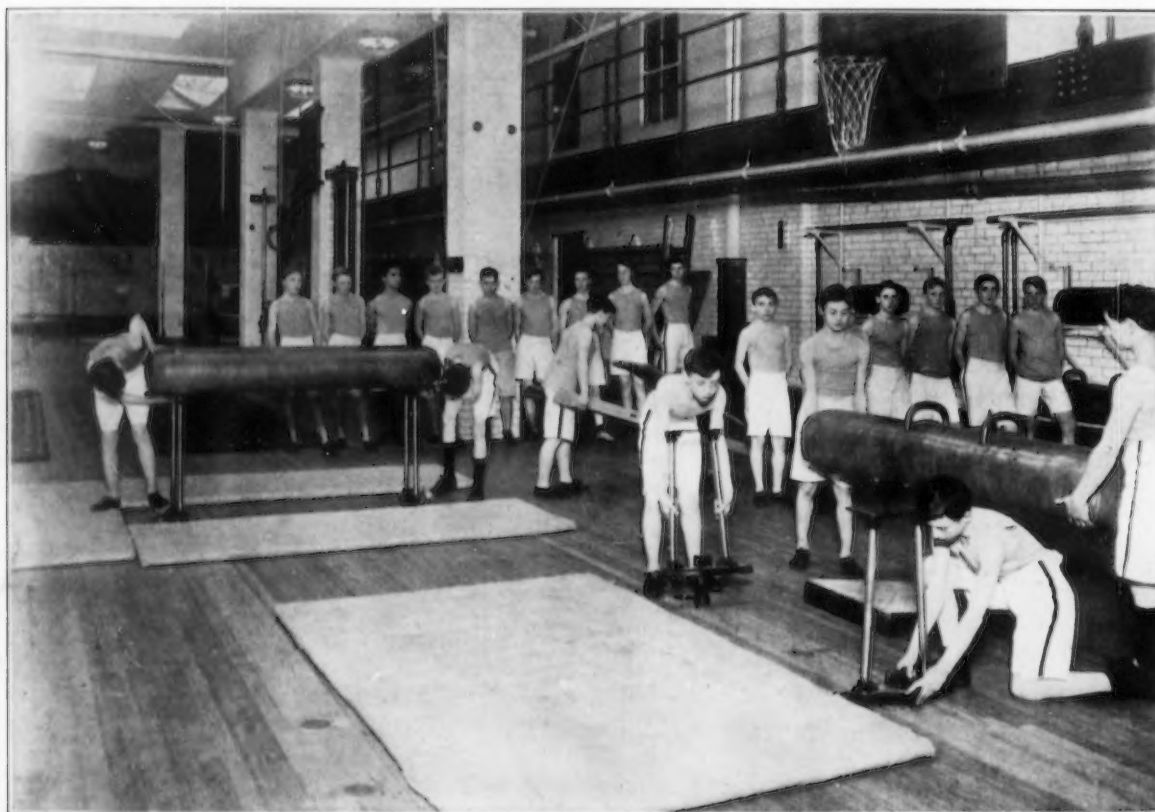


FIG. 10. SCHOLARS ADJUSTING GYMNASIUM APPARATUS.

Boards should be six inches wide, one and seven eighths inches thick, and stained to match other interior work.

If the maximum number of three hundred were worked on this floor probably not more than one half that number would use apparatus. Part of the room would have floor cleared and classes carried on in calisthenics, free exercises, tumbling, games, etc.

The average gymnasium will probably seldom run classes of over seventy-five, and from that down to thirty or forty. In planning a room I would base figures on the larger number. Avoid the *small* gymnasium where possible. Floor space and air space are both desirable. Applying the fifty square feet rule, the room should contain 3,750 square feet, and of the proportions generally to be recommended, measure 50 feet by 75 feet.

Fig. 7 illustrates a gymnasium of this size with the following equipment of principal pieces, shown as typical: Twelve chest machines, twelve bar stalls, twelve bar stall benches, one vaulting horse, one vaulting buck, one

floor. These sockets are made to fit either piece of apparatus, which when not in use is compactly stored on the wall. It is the storage feature particularly that adds to the working efficiency of the room in its saving of needed floor space when apparatus is out of use. This apparatus was especially designed at considerable expense to make this gymnasium fulfil its purpose.

Fig. 10 shows scholars adjusting apparatus.

Posts in some cases may be necessary in building construction, but they are objectionable from the gymnasium standpoint. Observe how they cut up floor space and that one of them is padded to lessen chances of injury in basket ball games.

Fig. 11 shows a beautifully arranged preparatory school gymnasium.

There is some diversity of opinion expressed among directors on the merits of the running track gallery. However that may be it is certain that this feature must be added in a gymnasium of the classes which I am at present

discussing, the running track events being the principal events of athletic contests and those that certainly require much preliminary training. While I am very strongly against the running track in rooms of inadequate size, it is to be assumed that with a knowledge of the work to be carried on, provisions will be made to properly care for that need. I should set the minimum size of a room combining gymnastics and athletics with its running track, at 50 feet by 75 feet. Some directors place this minimum at 40 feet by 60 feet. Association with many directors and contact with many varied problems of gymnasium outfitting lead me to criticise

of space exists. The concaved formation of the track is inconvenient for seating purposes, and more or less harm is liable to occur from chairs, stools, or street shoes. I believe careful study would develop a supplementary platform that could easily be placed and withdrawn and which would solve a serious problem in certain types of gymnasiums. One of our larger western universities has collapsible seats as used in circuses, that are set up when occasion demands on the gymnasium floor and stored in a mezzanine passage under the floor, which is centrally located between the locker room and pool below, being above a passageway on this floor, and which is reached through

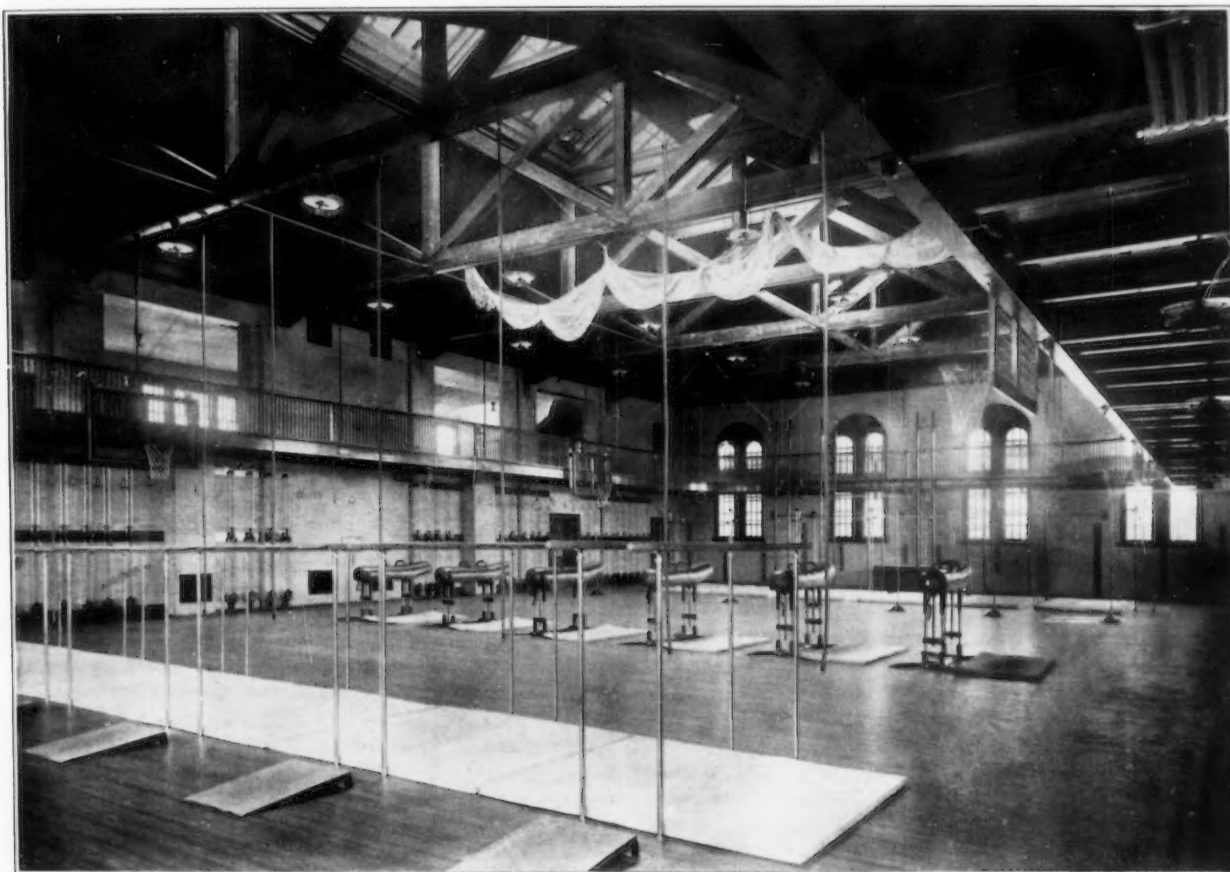


FIG. 11. A PREPARATORY SCHOOL GYMNASIUM.

this opinion. If the track is made wide enough to really serve its purpose to some degree at least, the gymnasium work is curtailed out of all proportion to the benefits derived. It would seem far the better judgment to have a positively good thing than two indifferent if not actually poor ones. Other directors, willing to concede the point as relating to the track proper are balanced by the additional value of its seating capacity. The same rule applies, however. The primary object is the need of a gymnasium, not a grand stand. First, supply that need to the full, then build on the furnishings. I think the point of these remarks will apply more particularly to Y.M.C.A.s and high schools. There is evident a great disposition to curtail space in gymnasiums of this character.

The problem of seating audiences on the running track gallery is still in an unsatisfactory state, even when plenty

trap doors from the gymnasium. Expensive, comparatively, to operate, but effective in its accommodations.

Office, dressing room, and examining room for the physical director should be on the floor with gymnasium. It is desirable to have the director's office placed so that he can view the gymnasium floor. In the larger universities that have a medical director with one or more floor directors, the office for the latter only may be so placed, and the office for medical director together with examining, dressing rooms, etc., may be more isolated.

Where provision can be made for it a small storage room just off the gymnasium, with good wide doors, would be of great value. It enables the director to keep off the floor any apparatus that he may consider undesirable at the time during class periods and also serves when room is used for occasional social functions.



## The Specification.

BY J. A. F. CARDIFF.

THE specification is justly considered of equal importance with the working drawings to which it is complementary. The latter express the architect's conception and the former describes in minute detail the mode of executing it. Together they present the architect's *projet* in a technical language readily comprehended by the builder and his artisans.

The ability to write successful specifications requires, among other things, an acquaintance with the principles of architecture, a very general knowledge of and actual experience in building construction and its technical terminology, and the art of expressing ideas in a systematic, lucid, and concise manner. In the more important offices, this branch of the work is executed by a specialist.

The specification should, above all things, be systematic in arrangement, precise in diction, and full and complete in all respects. The descriptive rather than the narrative style should be adopted. The materials and workmanship required should be defined with minute exactness. The phrasing should be as concise as is consistent with clearness. Excess of description, elaboration, of verbiage, repetition, and the use of more than one term to express the same thing, should be avoided, thus tending materially to render the language clear and explicit. Ambiguous or general terms should never be used as they are often a fruitful cause of expensive litigation.

This suggests the legal importance of the specification in the event of litigation—a matter that should be kept constantly in mind. The fact that the wording of the specification is generally the basis of over one half of the arguments in a lawsuit, emphasizes the need of exercising the utmost care in the construction of every sentence.

An error in etymology which quite frequently creeps into the specification is the use of the passive verb in the infinitive mood; as, "the work *is to be*," or "the contractor *is to*." Instead of this, the imperative mood, future tense, should be used; as, "the work *shall be*," or "the contractor *shall*."

The question of how fully or briefly the various matters comprised in the specification should be described, is one for the writer's judgment to decide in each case. Naturally, much depends upon the nature of the work, on whether the bidding will be restricted as in private practice or thrown open as in public work, and other considerations; so that no fixed rule can be laid down. But in the majority of cases, the prime requisite is, unquestionably, fullness and exactness in describing the materials, the workmanship, and the results which it is desired to obtain. In dealing with these matters, and in the matter of guarantees required against defects or deficiencies arising or discovered in the work, the specification cannot be too full. But in details, especially those defining the manner by which the results shall be produced, the specification can very easily be too full. And no greater mistake can be made than to restrict the freedom of the contractor in the method of producing certain results, when they can be secured equally well in various ways, and the best results to be obtained from

the contractor are dependent, more or less, on his following the way in which his own experience has taught him he can accomplish them most successfully.

Again, restricting the *modus operandi*, when in other ways, equally good if not better, the desired results may be obtained, makes the architect more or less responsible for the consequences resultant upon following the specified directions; and this matter alone often causes vexatious disputes.

When, however, the required results can be more clearly defined by describing a method of procedure, it should be done; but an opportunity should be afforded the contractor to suggest his own course, the architect reserving to himself the right to reject it if his judgment so dictates.

Until the working drawings have been well developed, or at least finished in pencil, it is not advisable to commence the draft of the specification, as unforeseen complications, which affect the specification, continually arise up to and even beyond this point and may be overlooked if the specification is under way too soon. But, from the beginning to the completion of the working drawings, the draftsman should make notes of any unusual conditions which develop, and of such matters of detail as would not be readily apparent to the specification writer.

This memoranda should be supplemented by more copious notes made by the specification writer concurrently with the progress of the drawings. For convenience, it is a good plan to classify the notes under their respective trade sections so that there will be before the writer, at one time, only those notes which relate to the trade whose work is then being described. This permits of a better concentration of the thoughts on the work of the trade being described, in that it does away with the distraction of having to run through a myriad of notes of a very miscellaneous character. Also, as the drafting of the specification progresses, matters will come up which require cross references in other trade sections, and memoranda of them can very conveniently be jotted down in the classified notes for these sections.

The specification writer and the head draftsman should co-operate in determining on a general line of demarcation between what should be described and what shown on the plans. Very frequently a word or two on the drawings covers what is required more clearly than a lengthy description in the specification. Again, there are times when the character of the various portions of a large building is so varied, that it greatly simplifies matters to indicate on the plans some details of the finishes of the most varied portions. This is especially true when a description of the details involves references under several of the trade sections.

All particulars relating to the manner of bidding, receipt of proposal, returning of plans and specification with proposal, examining of site, the right to accept any or to reject any or all proposals, and such other details as relate only to the bidding and not to the actual execution of the work, should be grouped under a heading such as "Instructions to Bidders" rather than under the general conditions or in the body of the specification. This sheet may be either sent to the bidders separately as a supplement to the specification, or better, bound in front of the specification.

A very important adjunct to the specification, and one which it is properly within the province of the specification writer to draft, is the form of proposal. This should accompany every specification when being issued for bids and is required for uniformity and precision of wording. It is particularly necessary when the specification provides for alternative methods of construction. In some offices a regular form of proposal is printed and sent out in duplicate so that the contractor may retain one copy for his files. Also, the printing is frequently, and advisedly, done with copying ink so that the contractor may make an impression of the estimate in his letter copying book if he has adopted that method of keeping his records.

The object of the general conditions, which precede the trade sections of the specification, is to cover such conditions as apply generally to all or most of the different trades comprised in the work to be done, and those details which cannot be properly classified under the different trade descriptions. This should be carefully borne in mind and such matters as are applicable to only one or a very few of the sections, should each be described under its respective trade section, rather than in the general conditions.

When a separate specification is made for each trade, such matters as the removal of rubbish, water supply for building purposes, watchman, temporary office, etc., which are usually comprised in the general conditions, should be distributed among the various trade specifications to the best advantage for securing the required results.

In the general conditions there should also be described some of the matters usually mentioned only in the contract. The matters of fire and liability insurance, bond, arbitration of disputes, liquidated damages, and guarantees are all items which entail expense to the contractor, and his attention should be called to them in the specification so that, in bidding on the work, he can take into account the cost that he would incur in complying with such stipulations. Providing for such matters only in the contract, generally leads to a claim on the part of the contractor for an increase in his quoted price to cover the cost of these items. The claim is just, but coming at a time when a contract is about to be closed at a prearranged price, is rather vexatious.

Again, such matters as will require attention during the progress of the work, should be put in the specification rather than in the contract, for the very obvious reason that they are less likely to be overlooked. The former is constantly referred to while the latter is seldom consulted — certainly it is not as accessible as the specification, and seldom, if ever, is a copy kept at the job.

The contract should contain only such matters as the consideration, manner of payment, provision against liens, and such other stipulations as pertain solely to the articles of agreement between the owner and the contractor. In this respect the form of contract adopted by the Michigan Chapter of the American Institute is better than the uniform contract adopted by the American Institute of Architects and the National Association of Builders.

Following the usual opening clause and index of the specification there should be given a *résumé* of the work intended to be done, under a marginal heading such as

"Work Required." Immediately after this, a summary of the work to be done under other contracts should be given under a separate marginal heading such as "Work Omitted." The necessity for knowing just what is not included occurs rather frequently during the prosecution of the work and should be made clearly evident as above suggested.

The specification should be divided into sections proportionate to the number of different trades comprised in the work to be done, and each trade section should be strictly limited to a description of the work which properly comes within its province as determined by the usual or customary practice in the locality in which the work is to be prosecuted.

As to the proper sequence for the trade sections, a very good way is to arrange them, as far as possible, in the order of their subsequent execution. The same sequence should obtain in the arrangement of the various items described in each section.

Each trade section of the specification should be started at the top of a page so that the general contractor, if he so desires (and he usually does), may readily separate the sections to give each of his sub-contractors the portion that relates to his individual branch of the work.

Each trade section should commence with a preamble calling attention to the general conditions and the fact that they apply with equal force to each and every section of the specification. This precaution, although unnecessary from a legal standpoint, is advisable for the purpose of emphasis; and, in the event of the specification being separated into parts, serves to remind the sub-contractor, or persons bidding for the general contractor, that the section is incomplete if not accompanied by the general conditions.

Immediately following the above preamble, and under a marginal heading such as "Work Required," there should be given a summary of the work comprised in the section; and, if there is any work usually done by the trade whose work is being described but which it is not contemplated including, it should be particularly excepted under a separate marginal heading such as "Work Omitted."

The pages of the specification should be numbered consecutively and an alphabetical index to the section headings provided, to facilitate the hasty reference so necessary during the prosecution of the work.

All paragraphs should be numbered, as it will be found to be a great convenience in corresponding, when there is occasion for a reference to items in the specification. Also, in describing a subject which entails a reference to an item in another section of the specification, a parenthetical reference to its paragraph number, placed in the body of the paragraph, is a great convenience to all who have subsequently to refer to the specification. The numbering should be consecutive as a specification rather than serially for each section.

The frequent use of marginal headings, for the items described under each section, makes them easy of reference.

The use of marginal sketches is at times most valuable, as they greatly assist in the clear interpretation of descriptions.

In the more important buildings, when the character of the work in the various portions varies to a considerable degree, a tabulation of the finishes, room by room, will be found most valuable. This tabulation is in the form of a supplementary section to the specification and its chief value lies in its giving a synopsis of the finish of any one room without the necessity of running through a myriad of detailed description to find information of a general character.

Specifications for alterations which are much involved should describe the work generally; that is, item by item without reference to trades. This may then be followed, if desired, with a more detailed description separated into trade sections.

Alternative methods of construction affecting many of the various branches of the work, greatly add to the complexity of a specification and increase the chances of oversights; and should, therefore, be avoided as much as possible.

When necessary, such alternatives are less complex if described in the form of an appendix at the end of the specification, rather than by references distributed throughout the specification. In the section descriptive of the work of each trade affected by the alternative, a note is made calling attention to the appendix. The method of construction most likely to be adopted should, of course, be specified direct; leaving the less likely methods as the alternatives.

Every specification should bear the date of its completion.

Binding the leaves of a specification at the side instead of at the top, similar to book binding, has much to recommend it and of late is being more generally adopted.

Complete records of the issuance and return of specifications should be kept, and if each copy of the specification is numbered it will be of great assistance in keeping track of them.

Questions brought up by the contractors when bidding, such as omissions, misdescriptions, ambiguous expressions, discrepancies between drawings and specifications, etc., which are at all important in their nature, should be made the subject of an addendum, issued to each and

every one of the bidders so that they will all figure on an equal basis.

Any modifications in the work as specified, should be carefully described by means of an addendum bearing the date of the modification; so that at the completion of the work the specification will be an exact description of the manner in which the work has been executed, rather than a description of how it was at one time contemplated executing it. A neglect of this precaution has, in the writer's experience, been a source of endless trouble in cases of subsequent alterations and additions to the buildings, the adjusting of losses by fire and the replacing of burned structures. The addenda are placed at the end of the specification and numbered as additional pages to the specification. Each addendum is also given a serial number.

Previous to the signing of the contract, any modifications in the work as specified may be made by correcting the descriptive matter itself, but modifications made during the prosecution of the work are better provided for by means of addenda. At the description of each item which is modified by the addenda, a note is made such as "See Addendum page . . .". The use of addenda is much to be preferred to letters authorizing the modifications.

Any modifications made in the specification should, if, at all possible, be made in every copy, as the existence of incomplete or void copies is bad practice and very likely to lead to troublesome disputes.

**IDENTIFIED AND ACKNOWLEDGED AS**

**PART OF CONTRACT DATED 2-19-02.**

**OWNER** John Jones

**CONTRACTOR** James Smith

For convenience in the matter of signing specifications and contract drawings, the use of a rubber stamp such as is illustrated is suggested.

## Student Life at the Ecole des Beaux Arts.

BY WALTER D. BLAIR.

SINCE the Ecole des Beaux Arts is the goal of a large number of American students it may be well to inquire into the requirements of the entrance examinations.

These are divided into two groups, the architectural and the mathematical. The first comprises architectural design, i.e., the *esquisse*, drawing, and modeling, and is open to everyone. One hundred and fifty students receiving the highest marks are allowed to take the second group, comprising written and oral examinations in plain, solid, and descriptive geometry, algebra, arithmetic, and history. Fifty Frenchmen and fifteen foreigners are chosen to enter the Ecole from the combined results of the two groups. The marks received in each

subject are multiplied, to give the total mark, by a varying coefficient; for architectural design fifteen, drawing ten, modeling five, mathematics fifteen, history one (the highest mark in any subject being twenty).

The most important examination is the *esquisse*, for which twelve hours are allowed. With a fair knowledge of design on the part of the student it is a matter of drawing or indication, as the French say—that is, presenting an idea in a clear, concise, unequivocal manner. One should give the greatest part of the twelve hours to the conception of his idea and to seeking the proportions and requisite character, leaving to the last few minutes its final expression and rendering.



The French methods of drawing columns, details, and motifs should be acquired as they will be found to be, as it were, a shorthand of architectural notation.

In doing preparatory *esquisses* it is well for the student to allow himself no more time than he will have in the examination. His idea should be expressed clearly, be correct in proportion, and imbued with the spirit and character of the program. To aid this, familiarity with the well known buildings of Paris, the Garde Meuble, the Louvre, the Monnaie, the Archives, the Luxembourg—to mention no others—their motives and elements, is indispensable. They should be compared, analyzed, and studied. Each problem's prototype should be visited. Seeing a building is worth more than an attentive study of its photograph. Since no part of Paris is devoid of architectural monuments the student when he leaves indoor work, can continue his studies during walks to the various parts of the city. A generous allotment of time to this instruction is desirable from every point of view. It increases the student's fund of knowledge, scanty on arrival, upon which he must draw for inspiration. It gives him ideas of character and scale, shows him that building material, be it stone, brick, wood, or iron, can be plastic, capable of expressing emotional qualities; be sad, severe, reverential, gay, as the subject is—tomb, law-court, church, or theater. He will thus begin to understand what the French mean by character—that a building to be good—to speak now only of the exterior, omitting considerations of plan—must reveal its destination and convey an emotional idea in harmony with its function. The great moral law in architecture, in little as well as big things, should be "Thou shalt not lie."

The search for character is the task the French student sets himself, when he has once acquired a sufficient knowledge of architectural elements and an appreciation of, or a feeling for, proportions. The American must do likewise. His chief aid will consist in examining the monuments about him. These the French have seen all their lives, so that much that the American must learn is innate with the French. The French student knows what makes the architectural elements—for example a pendiment—change its emotional note, be grave or gay, public or domestic in feeling. He has at his command an architectural notation in which to express his ideas and a language in which to discuss them.

Drawing in charcoal from the cast is almost as important as design. Most Americans, due to the little attention given to drawing in our schools, are less efficient here than in design. Accuracy and the expression of the character of the object are desired; if there be a flood of light, its portrayal in delicacy of tints and shadows; if the shadows be well defined and clear, a rendering of strong contrasts. To see accurately both form and values is the first requisite—to express what is seen so that another may behold its form and sentiment, the second.

Modeling is closely related to drawing and as it is easier, few students give much attention to it. Indeed it is said in the *Quarter* that the highest marks go to those who do the least before the examinations.

In the three subjects of the first group whatever the student does before reaching Paris is beneficial. The

more time he devotes to them, the more able he will be to profit quickly from his new environment.

In mathematics the French go deeply into theory. The American, if he desires, can get French textbooks from Pourchet, rue des Beaux Arts, for plain and solid geometry, algebra, and arithmetic. From them a knowledge of French methods and a vocabulary of mathematical terms, useful for the oral examinations, can be derived. English textbooks, while not so useful, will of course serve to refresh knowledge long forgotten. The reader will doubtless smile at the thought of an examination in arithmetic, for his ideas of arithmetic probably stop at the multiplication table, but neglect of the subject may be followed by disagreeable consequences at the oral examination.

In descriptive geometry the French present their mathematical "piece de resistance," which is, in spite of the boasts for thoroughness of some of our technical and architectural schools, unknown in our country. In this subject the American must learn almost entirely abroad from private coaching, textbooks, and discussion with other students until his knowledge is available without hesitation, for demonstrating before a blackboard difficult and complicated problems.

The written examination, the *epure*, for which twelve hours are allowed, is perhaps the most arduous test in the entire course of the school and consists in solving a series of revolutions, projections, and shades and shadows—operated upon some complicated form. The complete series is seldom finished, despite the twelve hours allotted to the task.

Pending the result of the examinations many leave Paris and visit for rest and recreation the cathedral towns, Coucy le Chateau, Fontainebleau, or any interesting place nearby. As meals and rooms at the average inn of a small town rarely exceed in cost 9 francs per day, such trips are as inexpensive as they are enjoyable.

If the student be admitted to the school, he becomes a member of the second class. If he has studied in a preparatory atelier—feeder for one of the regular ateliers—he becomes after initiation one of the *nouveaux* of his atelier and is compelled to give one day of each week to working for the older men and in addition three days each month just previous to the date when the alternating bi-monthly problems of the first and second class are due. The period of service lasts a year, after which the *ex-nouveaux* becomes in his turn beneficiary of the system.

During this period the American gets a working knowledge of French used by the students, a combination of slang and expressions not to be spoken before refined people. He likewise, if he attends lectures, acquires a technical vocabulary which will later on be useful for the oral examinations and courses in which textbooks are not used. The reading of a daily paper such as the *Martin* or *Petit Journal* will supply a current vocabulary better than any book and give an amusing insight into the politics of the country.

In the second class there are courses in stereotomy perspective, mathematics, construction, history of architecture, drawing, modeling, and design, which latter consists of the elements of architecture and problems rather of façade than of plan. The credits given are in

design "a mention" and a "premiere mention," counting one and two values respectively, or, as in all subjects, there may be no recompense, a "four" or "veste" as it is called. In the other subjects there are mentions and third medals. Four values in design, two in elements of architecture, and mentions in all the other courses are required to complete the work of the second class.

In the first class the student is occupied only with drawing, modeling, and design, in which serious and interesting programs are given, including the decorative competitions, the Rougevin and Godeboeuf.

The credits are in design — mention, second medal, and first medal, counting one, two, and three values respectively; in drawing and modeling, mention, and second medal. Ten values in design, one in modeling, and one each in drawing from the antique and from life, are required before one is qualified to present a thesis.

An erroneous impression of the length of time necessary to go through the Ecole has been formed. If the quality of one's work is such that medals are received, the time need not much exceed three years, and has often been less.

The hotels of the Latin Quarter are patronized by the newly arrived students until more definite plans are formed — Hotel Jacob, rue Jacob, within a block of the school, and Hotel Foyot, near the Luxembourg gardens, are typical. At the former a furnished room can be had for 55 francs per month, at the latter for 75 francs. Meals are taken at *pensions* or restaurants. The restaurants, such as the Pre'aux Cleres, Tyrion, and most economical of all, one in the rue de Beaune frequented by the neighborhood's bakers, picturesque in their large white caps, are the meeting places of students in which they discuss their work over meals. The *pensions* may be used for a few months by those just arrived, but their cheapness, varying from 150 francs upward for room and meals, is not sufficient compensation to long hold one. The students soon make acquaintances and in groups of two or more hire apartments, which can be had as cheaply as 600 francs per year, the tenant paying in addition certain taxes which the landlord hands on to his tenants when imposed on him by the state or city. In the apartment which I had and which consisted of two bedrooms, kitchen, and studio, the taxes amounted to about 100 francs, and the rent to 600 francs per year. In old buildings where quarters are cheap, it must be understood that there are none of the modern conveniences or necessities, except running water. The cheapest have neither gas nor electricity and are reached by many stairs. Yet the French merchant will send his boy each morning with a four-cent loaf of bread, a small quantity of butter, and a jug of cream up to the loftiest quarter. One hundred and ten steps led to the one I occupied and each morning the loaf of bread stood, end on, the French custom, upon the door mat. Breakfast, i.e., coffee and rolls, may be had on the wide sidewalks, served from a café, at the cost of 35 centimes and a tip of 10 centimes to the waiter.

Lunch and dinner may be had as cheaply as 2 francs 50 centimes or 3 francs 50 centimes at the Pre'aux Cleres, rue Bonaparte, or similar restaurants, where the regular tip to the waiter is three cents per meal. Some

Americans keep house, for which purpose a competent servant who cooks, goes to market, does the housework, and can be hired for \$7.00 per month. Of the expensive cafés La Tour d'Argent and Laperousse are well known for the excellency of their special dishes.

Usually the price for a table d'hôte luncheon throughout the smaller towns of France is 2 francs 50 centimes. In the large cities meals can be had at these low prices, but not of the quality and variety afforded in the villages. Culinary skill exists throughout France and the traveler will make, on this score, many comparisons to the detriment of his own land.

Dining al fresco is very common. The sidewalks, which are wide, are utilized for the purpose, and dotted with tables and people, contribute much to the animated aspect of the streets. Each café has its set of habitués to whom the café is a club where games, especially cards and checkers, are played, and papers read after meals. One is struck by the leisurely atmosphere of these small numberless cafés — no cry of "what next" from waiters, no prodding to order this and that — places where one glass of beer may be consumed the entire evening and not provoke angry or scornful glances from employees or proprietor.

Of the students' celebrations, the Ballade du Rougevin following the rendue of the problem of that name is interesting. Floats from all the ateliers gather in the courtyard of the school to meet the competitors coming from their work. A motley crowd with banners, lanterns, and calcium lights goes singing and cheering through the narrow streets of the *Quarter* to the Pantheon where a bonfire of the floats is the culmination. Viewed from this distance it is very silly, not at all business-like, or practical, but when were manifestations of animal spirits, of exuberance of life, sensible? Their charm is rather in their irrelevancy, their nonsense.

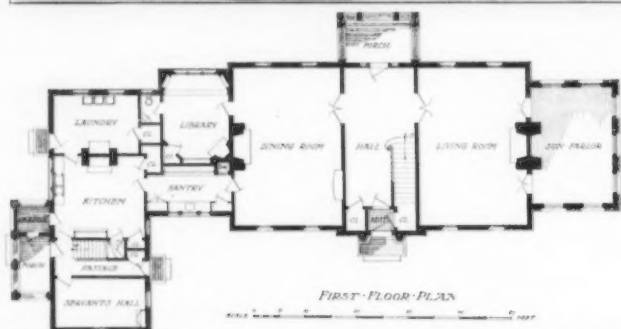
The Quat'z Arts Ball is the artistic tradition and triumph of the *Quarter*. Students and professors only are admitted to it, after their costumes have been approved. Its gorgeousness of color and sumptuousness of effect are a dazzling and successful appeal to the sensuous.

The ateliers, with the exception of the three housed in the Ecole, occupy quarters in old buildings where cheapness and dirt keep company. A crowd of students is not a desirable neighbor: they sing much, often through the night. The walls of the rooms are decorated with caricatures and pictures until a dark somber tone is attained that accords well with the dirt, dishevelment, and confusion of the place. The lighting is by candle, each man furnishing his one or two candles that are stuck to the board on which he is working. The air of the room is close, for there is no ventilation. Silence never prevails. Jokes fly back and forth, snatches of songs, excerpts from operas, at times even a mass may be sung, yet amid the confusion and babble — strange as it may seem — work proceeds.

The fruits of that work should be an architectural point of view from which all problems, however various, are to be seen and studied, an architectural mode of expression and language, and a knowledge of monuments and buildings of many epochs.







HOUSE AT LAWRENCE, L. I., N. Y.  
WILLIAM ADAMS, ARCHITECT.





NATATORIUM IN PHIPPS BUILDING, PITTSBURG, PA.  
GROSVENOR ATTESBURY, ARCHT.





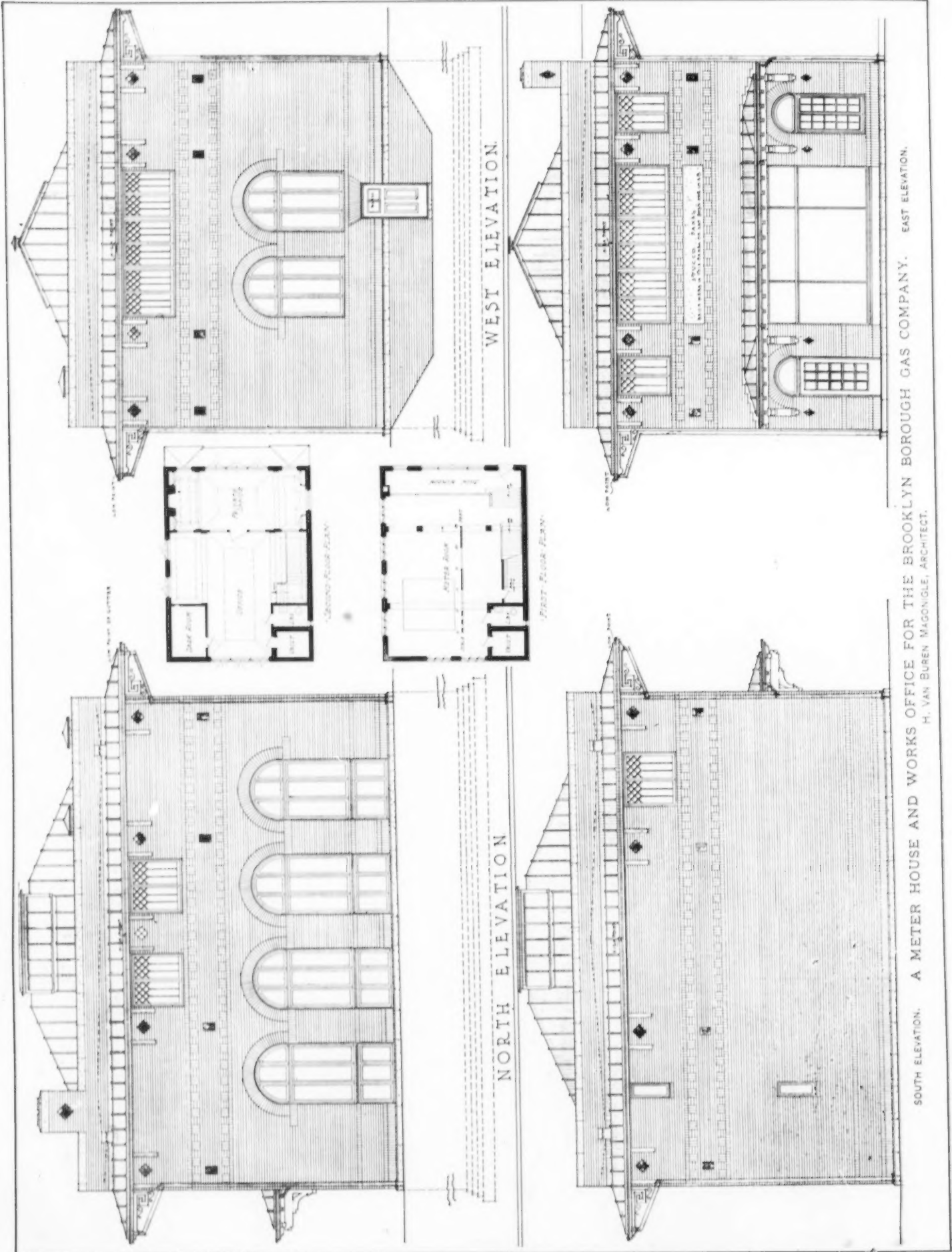


DURAND COMMONS,  
DINING HALL,  
LAKE FOREST UNIVERSITY,  
LAKE FOREST, ILL.  
HOWARD VAN D. SHAW, ARCHT.

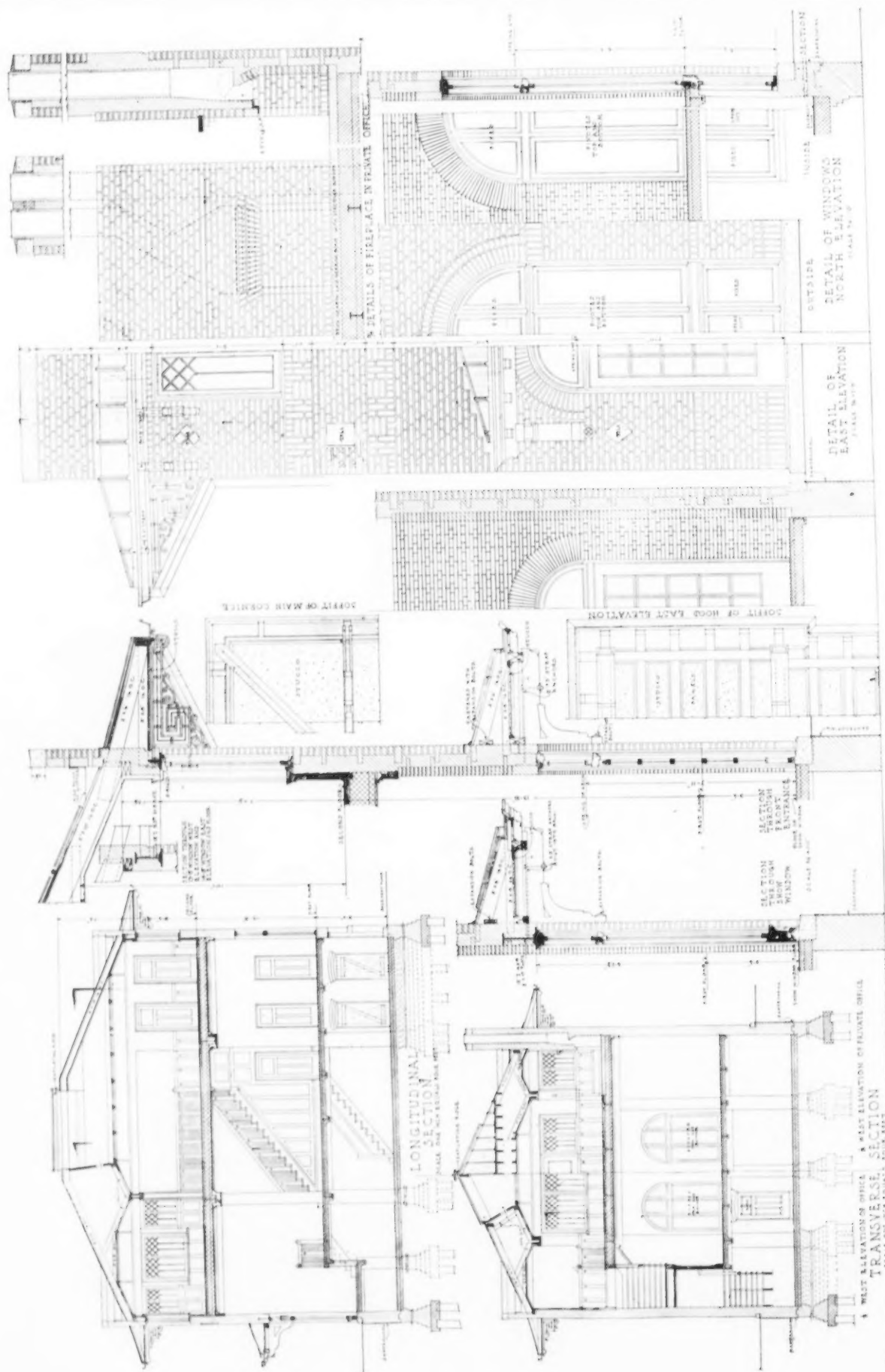










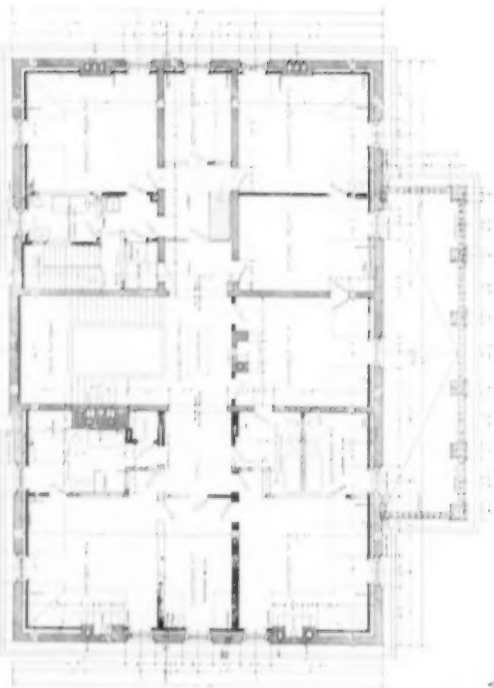


A METER HOUSE AND WORKS OFFICE FOR THE BROOKLYN BOROUGH GAS COMPANY.  
H. VAN BUREN MAGONIGLE, ARCHITECT.



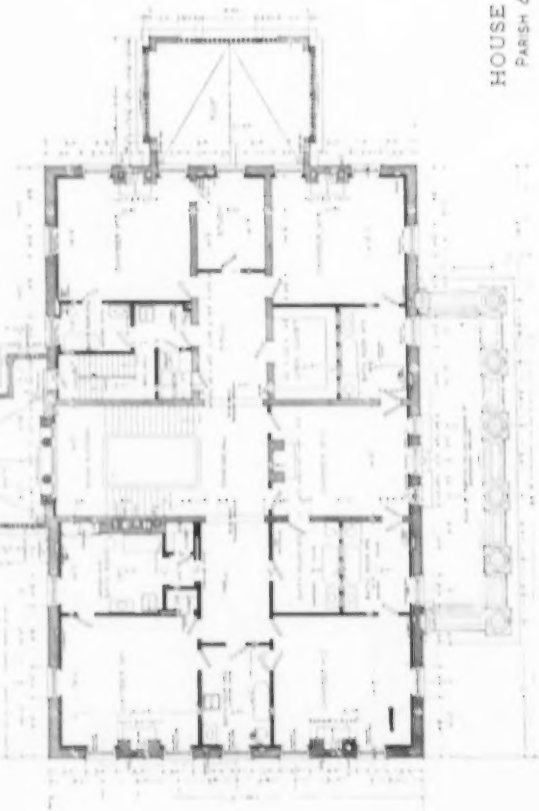


THIRD FLOOR PLAN.

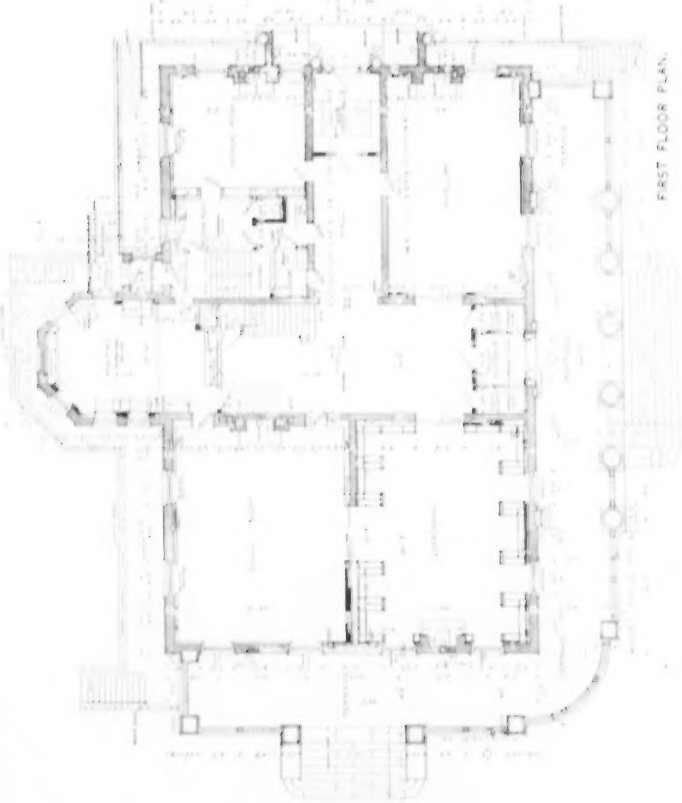


FLOOR PLANS.  
HOUSE AT RICHMOND, VA.  
PARSH & SCHROEDER, ARCHITECTS.

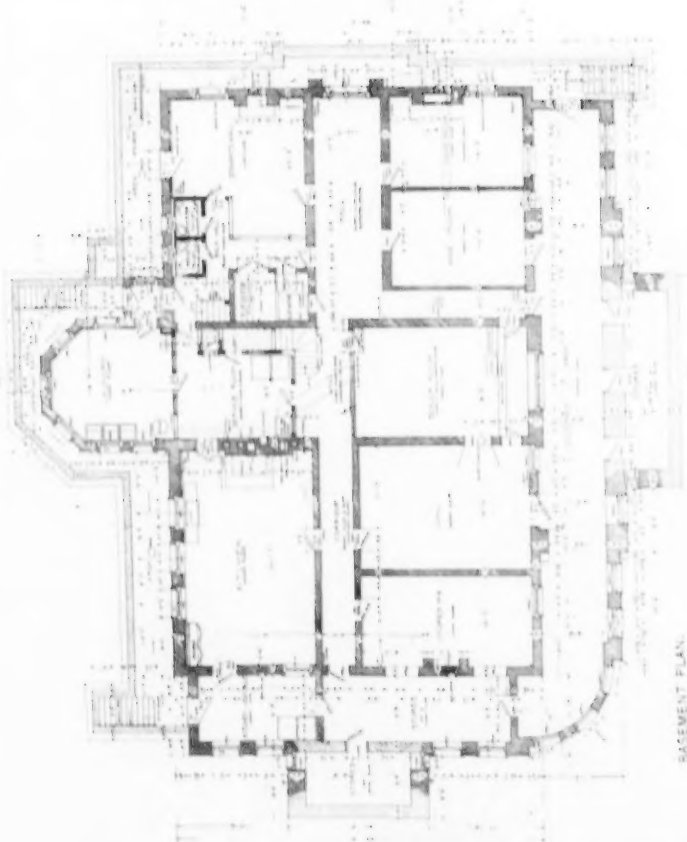
SECOND FLOOR PLAN.



FIRST FLOOR PLAN.



BASEMENT PLAN.

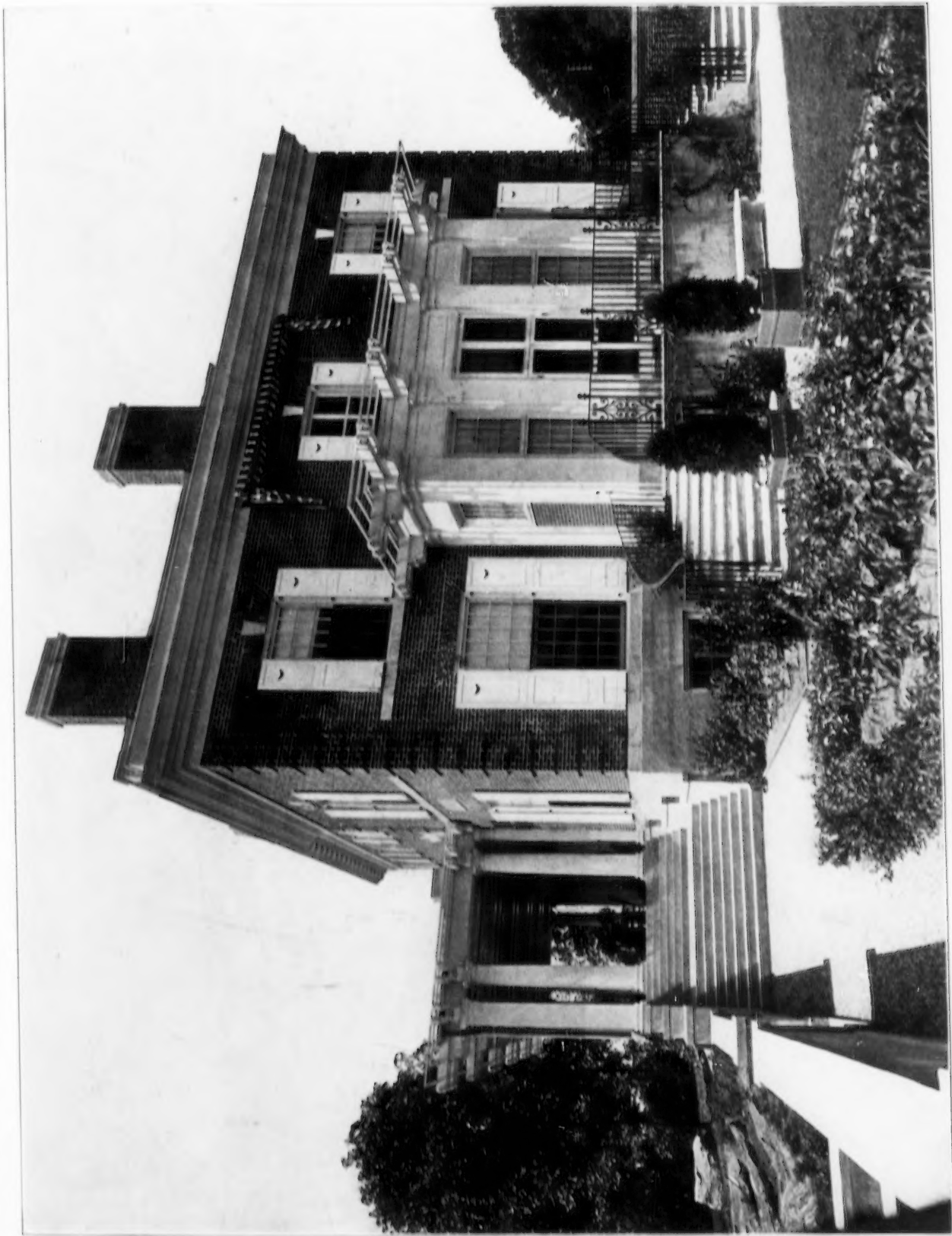






HOUSE AT RICHMOND, VA.  
PARK & SCHROEDER, ARCHITECTS.



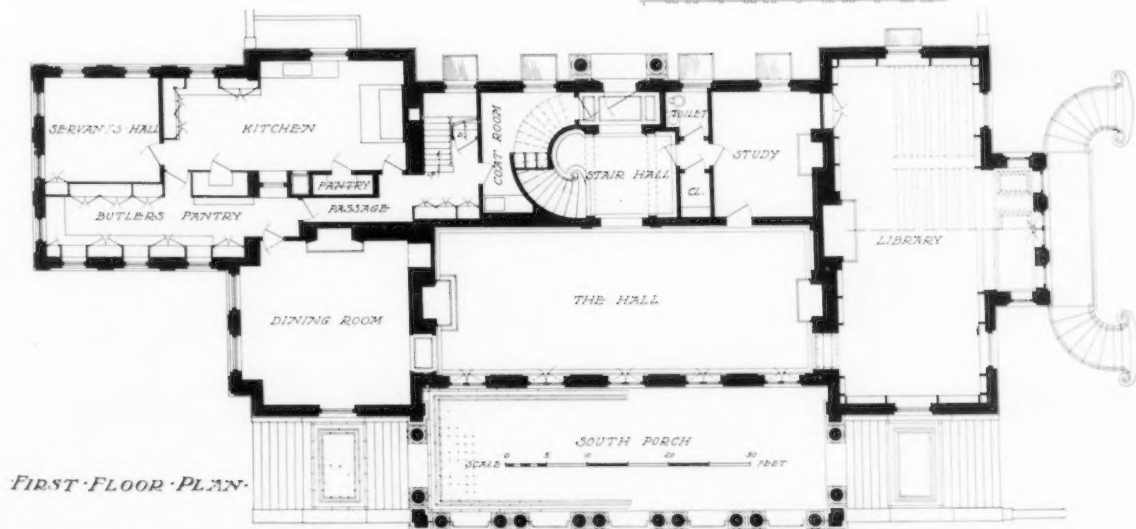
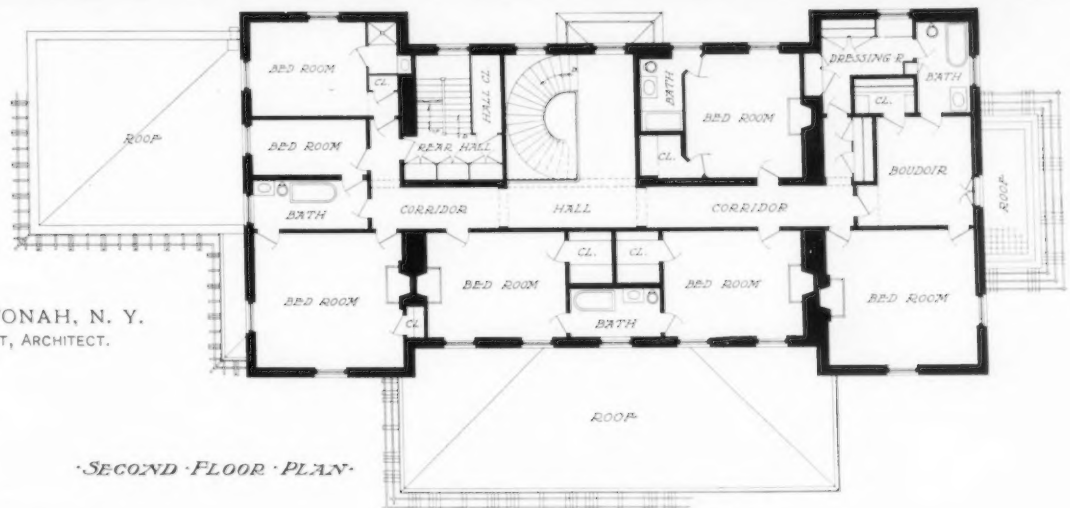


HOUSE AT KATONAH, N. Y.  
CHARLES A. PLATT, ARCHT.



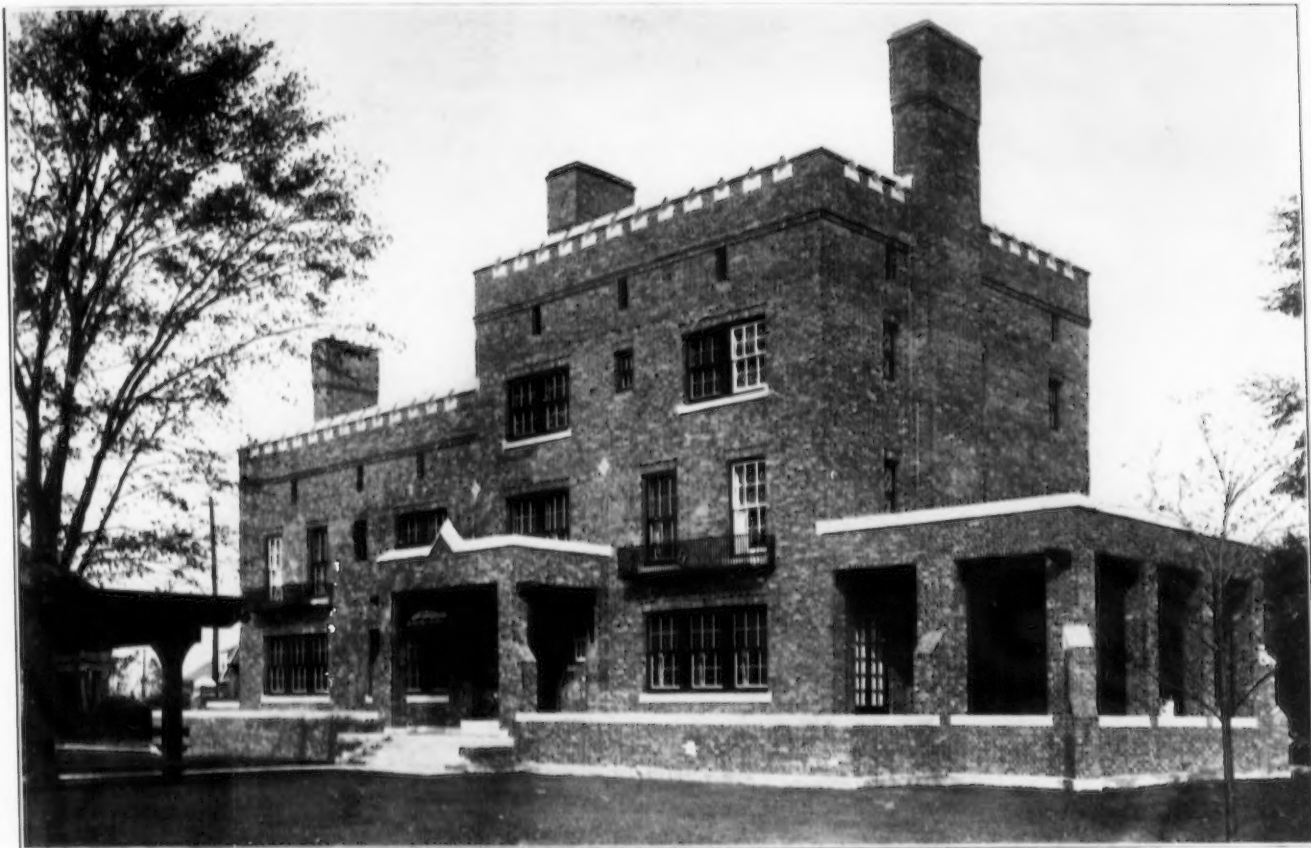


HOUSE AT KATONAH, N. Y.  
CHARLES A. PLATT, ARCHITECT.









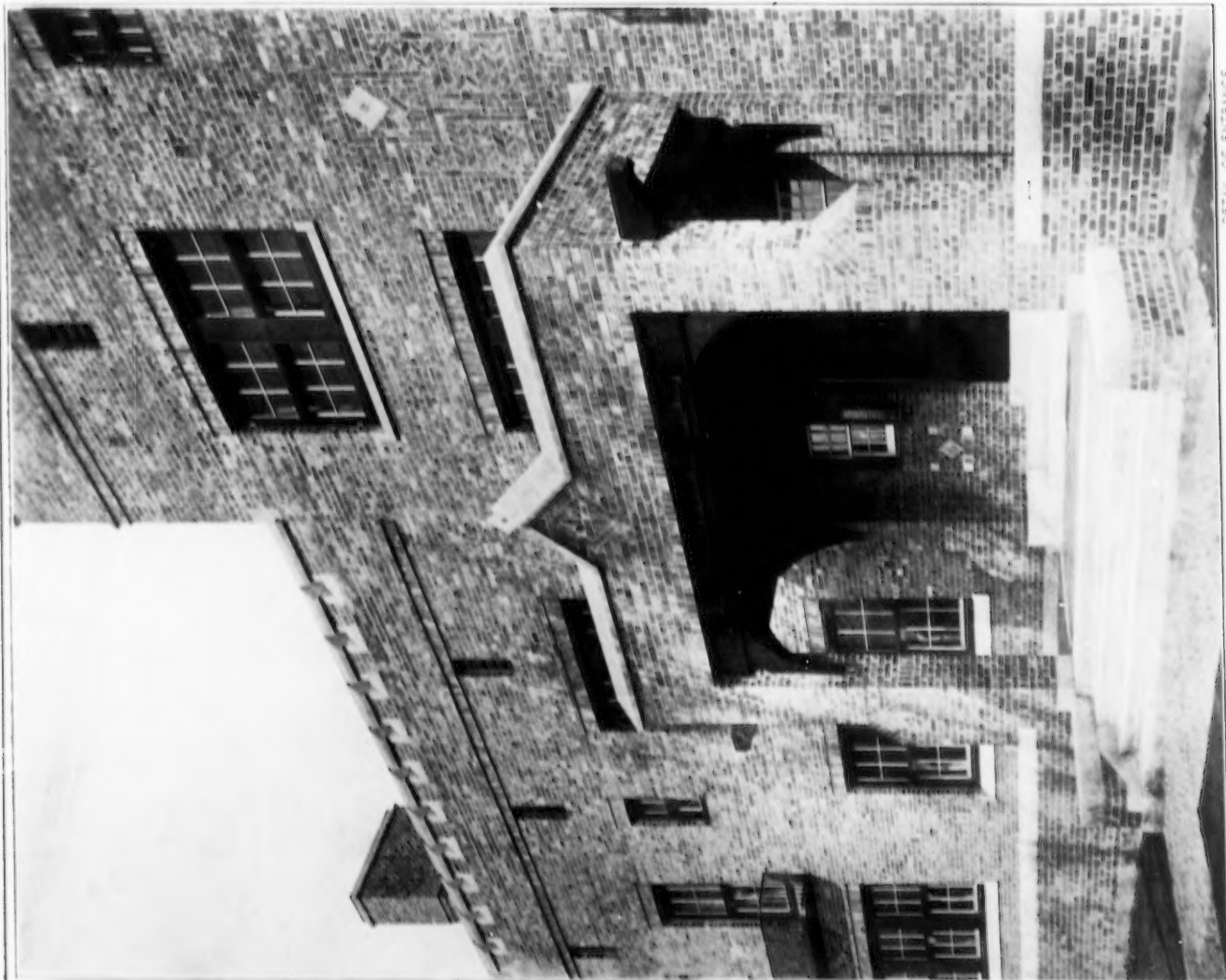
VIEW FROM SOUTHEAST.



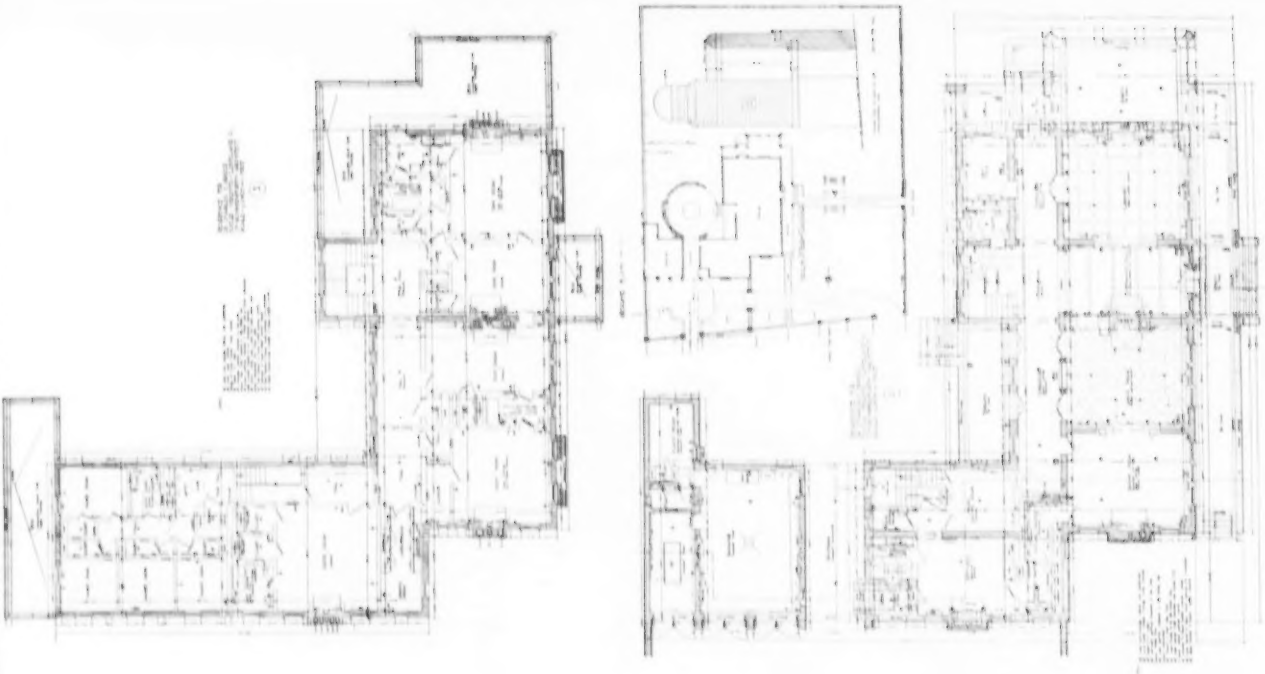
VIEW FROM SOUTHWEST.

HOUSE FOR DR. CHARLES E. BRIGGS, EUCLID AVENUE, CLEVELAND, OHIO.  
CHARLES F. SCHWEINFURTH, ARCHITECT.



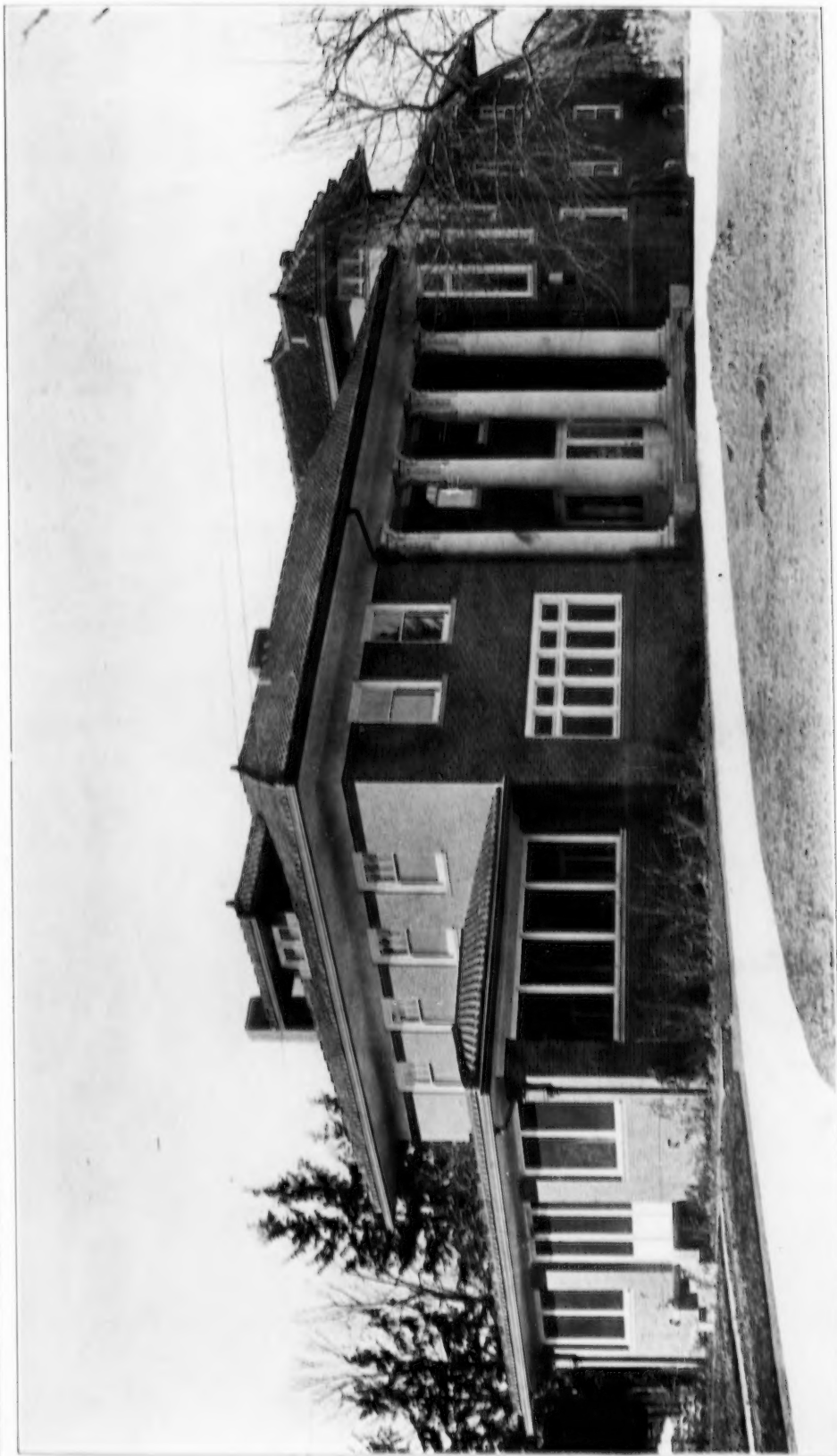


DETAIL OF ENTRANCE.  
HOUSE FOR DR. CHARLES E. BRIGGS, EUCLID AVENUE, CLEVELAND, OHIO.  
CHARLES F. SCHNEIDERMAN, ARCHT.

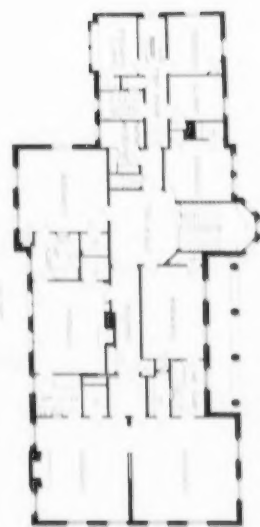




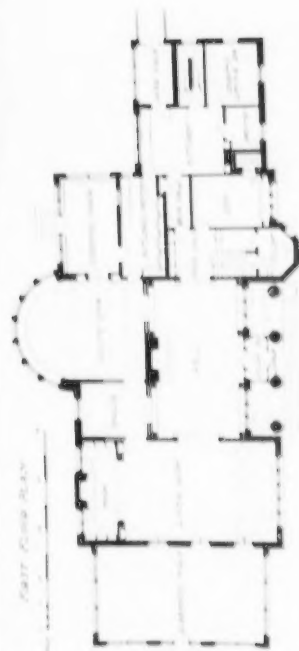




SECOND FLOOR PLAN



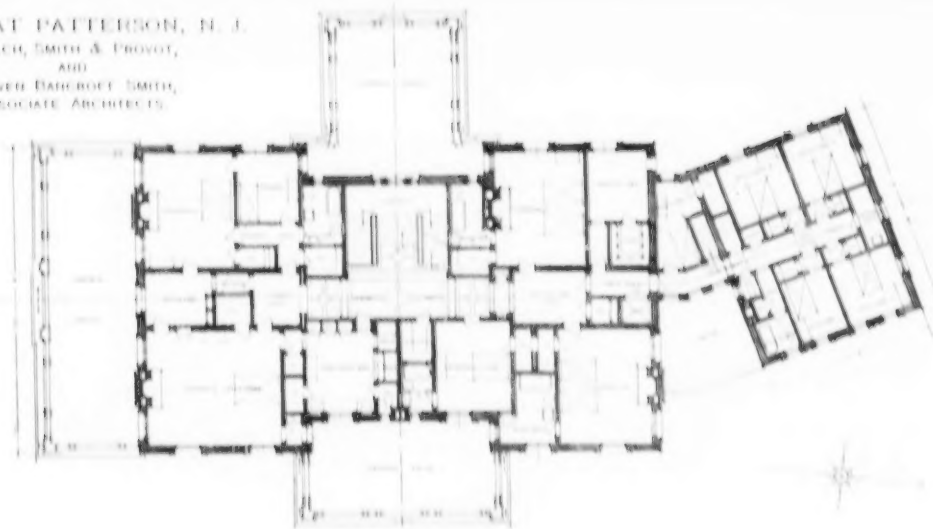
FIRST FLOOR PLAN



HOUSE AT LAKE FOREST, ILL.  
W. CAREY EMERSON, ARCHT.



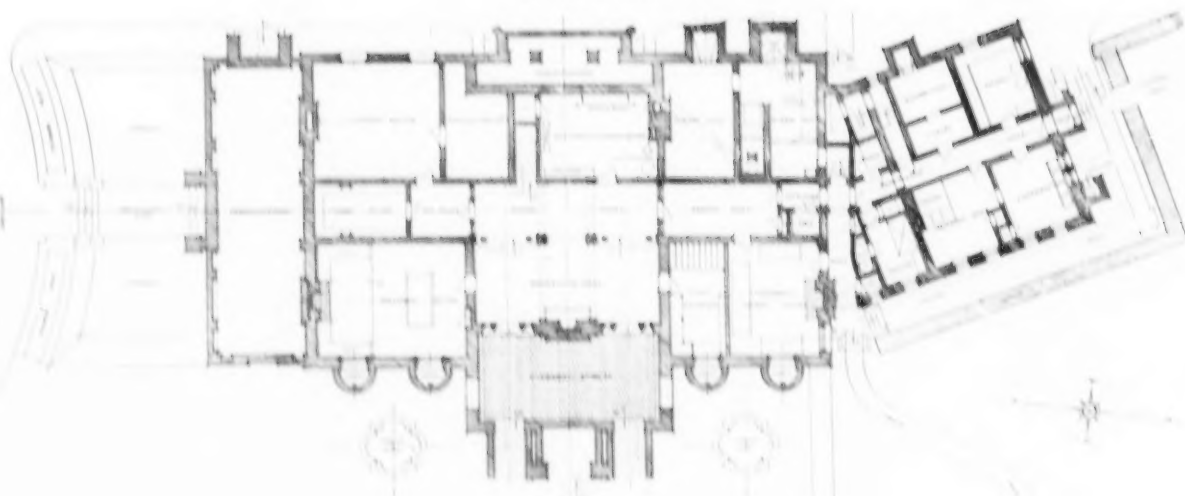
HOUSE AT PATTERSON, N. J.  
WELCH, SMITH & PROVOT,  
AND  
BOWEN BARBOUFF SMITH,  
ASSOCIATE ARCHITECTS.



SECOND FLOOR PLAN



FIRST FLOOR PLAN



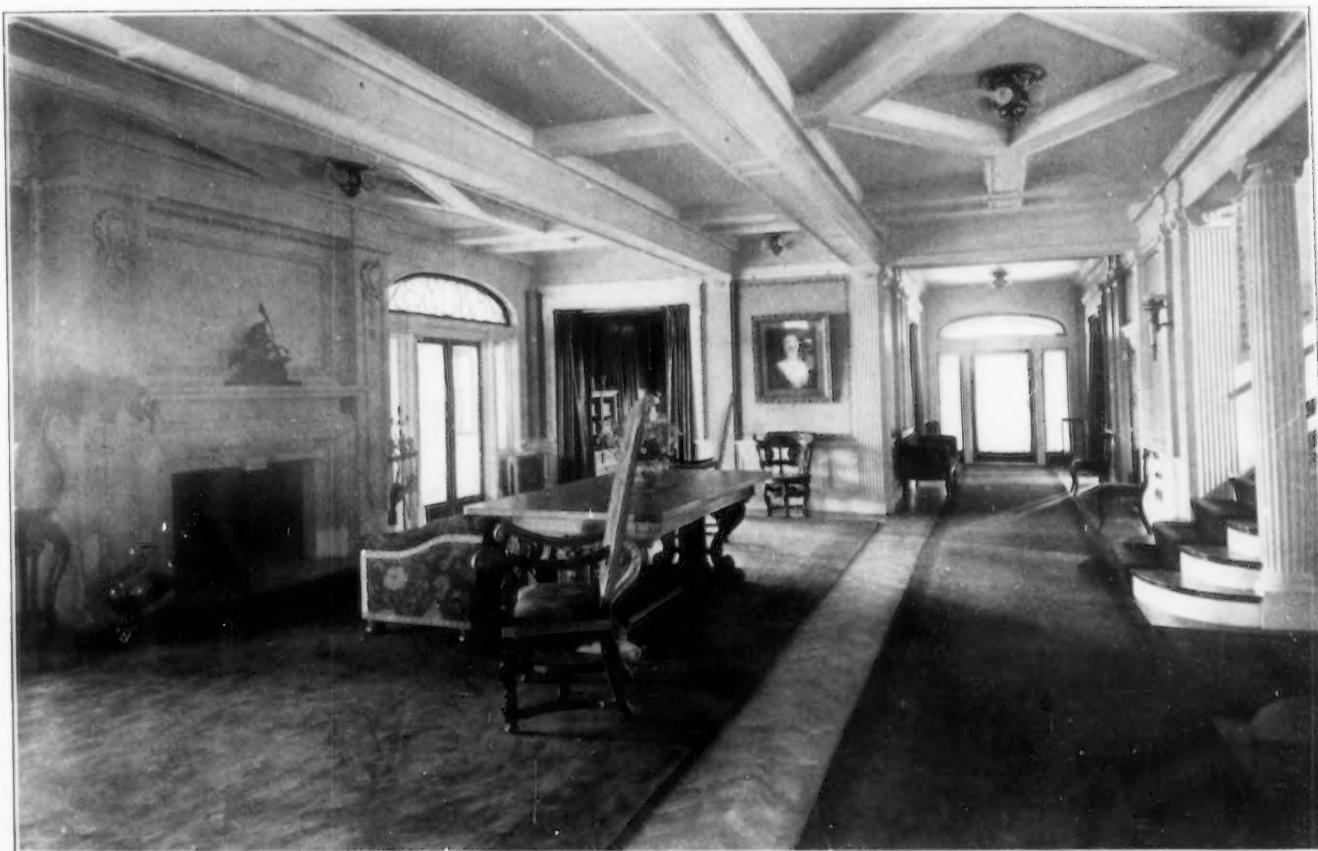
BASEMENT FLOOR PLAN







HOUSE AT PATTERSON, N. J.  
WELCH, SMITH & PROVOT, AND BOWEN BANCROFT SMITH, ASSOCIATE ARCHITECTS.



RECEPTION HALL.



## Standard Architectural Books—V.

## SCHOOLS.

**EDMUND MARCH WHEELWRIGHT, F.A.I.A.:** Architect of the city of Boston 1891-1895. *School Architecture*, a general treatise for the use of architects and others; with descriptive illustrations. Boston, Rogers & Manson, 1901; 4to (.27 by .20 by .05), 15 + 129 p., ill.; cloth, \$5.00. Mr. Wheelwright describes his book well when he says in his preface that he has "sought to keep within the province of the architect, and not to trespass upon that of the educator, or of the engineering, sanitary, or hygienic expert." He has himself built some most attractive schools, and is disposed to give the element of beauty in design its proper place. In the text of his work he has used to advantage the sixth volume of the fourth part of the "Handbuch der Architektur" noticed in our first article. His Boston schools are illustrated in a monograph by Francis W. Chandler entitled "Municipal Architecture in Boston from Designs by Edmund M. Wheelwright." Boston, Bates & Guild, 1898; 2 vols.

**Joseph A. Moore:** Inspector of public buildings, state of Massachusetts. *The School House, its Heating and Ventilation*, published by the author, 1905; 8" (.24 by .16 by .015), 8 + 204 p., ill., plans; cloth, \$1.80. This book has a chapter on the architecture of schools, but is mainly devoted to a thorough discussion of the hygienic phase of the subject.

**Felix Clay, B.A.:** Architect. *Modern School Buildings, Elementary and Secondary; A treatise on the planning, arrangement, and fitting of day and boarding schools* . . . with special chapters on the treatment of class rooms, lighting, warming, ventilation, and sanitation. London, Batsford; New York, Scribner's Sons, 1903; 4to (.285 by .195 by .05), 20 + 459 p., ill.; cloth, 25s. net. Clay's book gives English practice mainly and develops the scientific side of the subject. It is, apparently, the latest of the special works.

## LIBRARIES.

**John Willis Clark, M.A., F.S.A.:** Author of the *Architectural History of the University of Cambridge*. *The Care of Books; an Essay on the Development of Libraries and Their Fittings, from the Earliest Times to the End of the Eighteenth Century*. Cambridge, at the University, second ed., 1903; 4to (.27 by .18 by .04), 18 + 330 p., ill., pl., plans; cloth, 18s. net. The vast production of books in modern times has forced upon us the stack system and has made our libraries mechanical. It is pleasant to be brought into contact with the sympathetic *intimite* of older methods of housing books, when they were less plentiful, and more keenly delighted in. Clark's "Care of Books" is a thorough discussion of the development of library construction from the earliest efforts to the modern period. Every architect who builds libraries should have this book, and will do well to return, when he can, to the earlier types. The illustrations are made from old examples hardly to be found elsewhere.

**Theodore Wesley Koch:** Librarian University of Michigan. *A Portfolio of Carnegie Libraries*, being a separate

issue of the Illustrations from "A Book of Carnegie Libraries." Ann Arbor, Michigan, George Wahr, publisher, 1907; 8" (.25 by .16 by .02), 120 plates in portfolio, abundant plans; \$2.50 net. The creation of the Carnegie foundations, coming rapidly, and resembling each other closely, has forced the development of a peculiarly modern type of small library buildings, which have been for the most part as well designed as possible. Mr. Koch's portfolio presents the series well, with many photographs and plans. His general work on Carnegie libraries will be valuable when it appears, although only incidentally concerned with architecture.

**Free Public Library Commission of Massachusetts.** *Ninth Report*, Boston, Wright and Potter Printing Company, state printers, being Public Document No. 44, 1899; 8" (.23 by .15 by .05), 17 + 465 p., many photographic illustrations; apply to the secretary of the Commonwealth of Massachusetts. This report is especially valuable for a large number of photographic illustrations of working libraries. There are no plans. At the end of the volume is a section on the general library legislation of Massachusetts, beginning with 1798.

## THEATERS.

**Edwin O. Sachs:** Chairman of the British Fire Prevention Committee and E. A. Woodrow. *Modern Opera Houses and Theaters; examples selected from play-houses recently erected in Europe; with descriptive text. A treatise on theater planning and construction, and supplement on stage machinery, theater fires, and protective legislation*. London, Batsford, 1896-97-98; fol. (.575 by .415 by .055), 3 vols., ill., 220 pl., 32 paged pl., 315s. unbound. A part of the third volume has been published separately under the title, "Stage Construction," Batsford, 1898. These three large volumes on theaters constitute the most exhaustive treatise published on this subject. All the most important theaters built up to the date of publication are included, as well as a thorough discussion of theoretical matters connected with the subject. Notwithstanding its cost the book should be in every considerable office.

**William H. Birkmire:** *The Planning and Construction of American Theaters*. New York, John Wiley, 1896; 8" (.235 by .155 by .025), 10 + 117 p., 38 pl., 2 paged pl.; cloth, \$3.00. Birkmire's little book contains an excellent sketch of the history of American theaters and descriptions of the leading buildings; but its chief value is in the careful account of American methods of construction and legal limitations.

**William Paul Gerhard, C.E.:** Consulting engineer. *Theaters; Their Safety from Fire and Panic, Their Comfort and Healthfulness*. Boston, Bates & Guild Co., 1900; 8" (.22 by .15 by .02), 5 + 110 p.; cloth, \$1.00. In his publications on theater construction Mr. Gerhard's point of view is that of the practical engineer looking out for the many details essential to the comfort and safety of crowded buildings.

**William Paul Gerhard, C.E.:** *Theater Fires and Panics, Their Causes and Prevention*. New York, John Wiley & Sons, London, Chapman & Hall, 1896; 8" (.19 by .13 by

.015), 7 + 175 p.; cloth, \$1.50. This book contains a valuable bibliography of material on theaters, which includes books and articles in periodicals.

## HOSPITALS.

Sir Henry Burdett, K.C.B.: Editor of the *Hospital*. Hospitals and Asylums of the World; their origin, history, construction, administration, management, and legislation; with plans of the chief medical institutions accurately drawn to a uniform scale, etc. London, J. & A. Churchill, 1891-93; text, 4to (.27 by .19 by .06), 4 vols., plates, 1903; fol (.51 by .35 by .02), 1 vol., 112 pl.; cloth, 168s. net. Vols. II and IV contain bibliographies. Burdett on hospitals is the most important and most extended work on the subject. The entire history of this class of buildings is given, with the practice in every country; and abundant examples. The research on which the work is based has been exhaustive, so that up to its date of publication it may be considered a complete body of practice in hospital architecture. For the practice since 1893 one must depend upon reports in the architectural journals, where detailed drawings of all important hospitals may be found.

Albert S. Ochsner, B.S., F.R.M.S., M.D.: Professor of clinical surgery, University of Illinois; and Meyer J. Sturm, B.S., architect. The Organization, Construction, and Management of Hospitals; with numerous plans and details. Chicago, Cleveland Press, 1907; 4to (.28 by .21 by .04), 600 p., ill.; cloth, \$7.00. The book of Ochsner and Sturm does not take the place of Burdett with its fine body of examples; but on the theoretical side it is better, being based upon later practice. The sections devoted to lighting, plumbing, ventilation, and like matters are valuable in themselves and in their general application.

Sir Henry Burdett: The Cottage Hospital; Its Origin and Progress, Management and Work, etc. London, J. A. Churchill, 1877; 12mo (.19 by .13 by 0.25), 13 + 5 + 272 p., ill., 1 pl.; 3d ed. rewritten, enlarged 1896; cloth, 10s. 6d. We cannot, in our bibliography, include the long list of Sir Henry Burdett's publications on hospitals, but this little work on the cottage type may be profitably added.

## BRIDGES.

Edward Cressy (1792-1858): Architect, civil engineer, F.S.A. A Practical Treatise on Bridge-Building, and on the Equilibrium of Vaults and Arches, with the Professional Life and Selections from the Works of Rennie. London, John Williams Library of the Fine Arts; New York, Wiley & Co., 1839; fol (.575 by .465 by .015), 3 p., 18 copper plates; 42s. Modern books on bridge building are entirely concerned with structural matters, and are to be classed with engineering and not architecture. Of the old books on masonry bridges, Cressy is probably the best, giving the fine English practice of the early nineteenth century.

## GREENHOUSES.

Lord & Burnham Co.: Greenhouses as We Build Them, and other catalogues and circulars of greenhouse construction. New York office, St. James Building, 1907. In the absence of special works on this subject we may recommend the catalogues of a leading firm of architects which has devoted itself to this type of buildings.

THE ARTS ALLIED TO ARCHITECTURE.  
CIVIC ART.

Georges Eugène Haussmann, Baron, 1809-1891; Préfet de la Seine 1853-1869: Mémoires. Paris, Victor Havard, 1869-1893; 8° (.23 by .155 by .04); 3 vols., 5 por.; 22.50 francs, unbound. The reconstruction of Paris by Napoleon III was the first large attempt to meet the problems of civic construction. In a surprising number of cases these problems were met and solved correctly. The best record of the work is in these reminiscences of a clever old man. Anyone undertaking the study of civic art should commence with Haussmann's Mémoires. He will be immensely amused by the way.

J. Stübben, Stadt-Baurath in Cologne: Der Städtebau, being the ninth half volume of the fourth part of the Handbuch der Architektur. Darmstadt, Bergsträsser, 1890; 4to (.275 by .2 by .04); 9 + 561 p., ill., 12 pl., 104 paged pl., 1 table; 32 marks. As important as the building, is its emplacement in the general plan of the city or town. The complete art of the city has been thoroughly illustrated by Stübben in his Städtebau, which is the standard manual on this subject.

Camillo Sitte: Director of the Gewerbeschule in Vienna. Der Städtebau nach seinen Künstlerischen Grundsätzen. Vienna, Carl Graeser & Co., 3d. ed., 1901; 8° (.225 by .145 by .015); 7 + 180 + 4 p., ill., 4 pl.; cloth, 7 marks. The Haussmannizing of Paris carried the French sense of classic symmetry to its logical conclusion. The effect in Paris is fine, but copied in every European city the result was a degree of monotony, against the burden of which a more modern school, with Sitte at its head, rebels. Sitte's book is held to the artistic side of the subject, and is sympathetic toward all the older schools of civic arrangement.

Charles W. Eliot: President of Harvard University. Charles Eliot, landscape architect. Boston and New York, Houghton Mifflin & Co. 1903; 8° (.23 by .16 by .03); 2 vols., ill., pl., portraits, maps, plans; cloth, \$3.50. The second volume of this book covers the period during which Mr. Eliot was the landscape architect to the Metropolitan Park Commission of Boston, and is the best record of the intelligent reconstruction to which that city has been subjected.

Charles Mulford Robinson: Modern Civic Art; or, The City made Beautiful. New York, G. P. Putnam's Sons, second ed. 1904; 8° (.23 by .155 by .035); 12 + 381 p., photographic pl.; cloth, \$3.00. It would be pleasant to notice more of Mr. Robinson's enthusiastic work on civic art, but this one volume must suffice. "Modern Civic Art" is for the general reader and intended not so much to instruct as to interest him in multitudinous matters which are often forgotten and neglected.

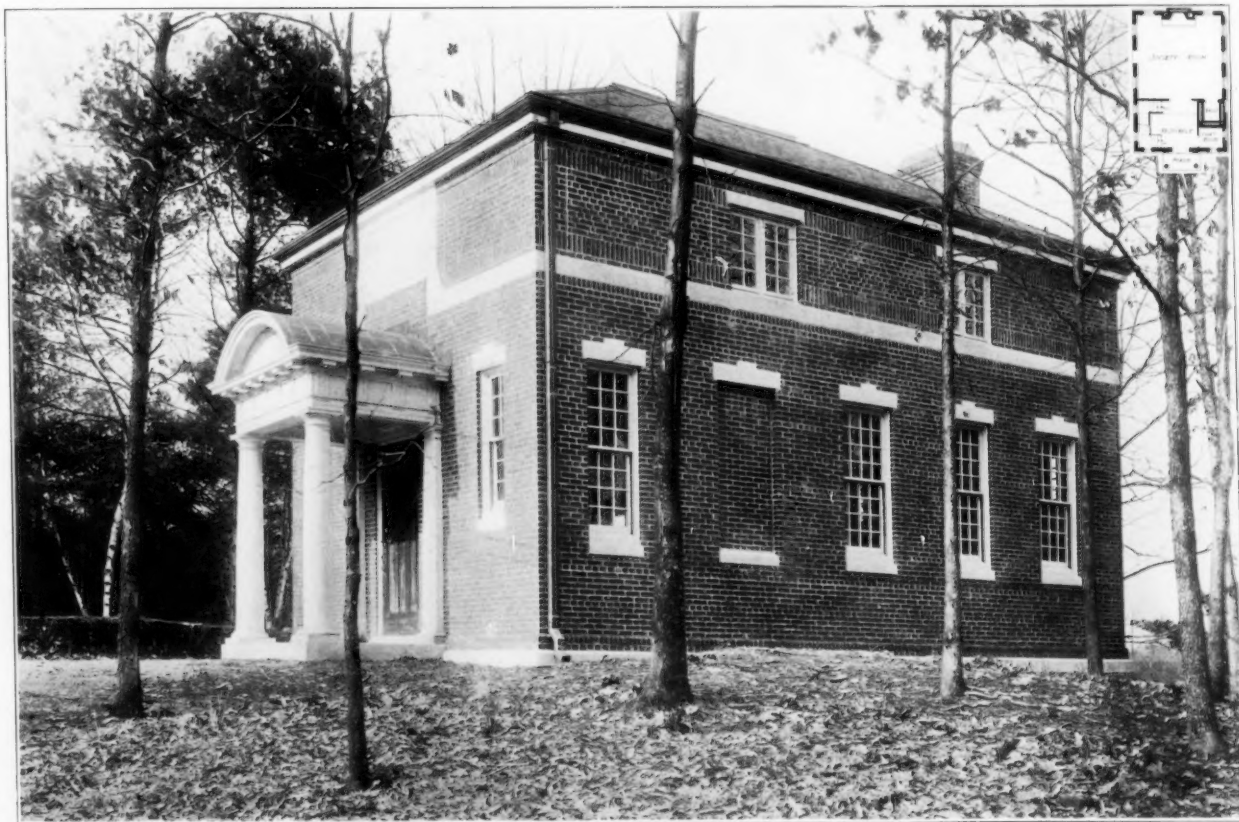
## JARDINAGE.

Edouard André: Jardinier principal de la Ville de Paris. L'Art des Jardins, traité général de la composition des Parcs et Jardins. Paris, Masson éditeur, 1879; 4to (.29 by .21 by .07); 8 + 888 p., 520 ill., 11 pl.; 35 francs, unbound. André was in the line of succession after the great Alphand as the supreme authority in the management of the *Jardinage* of Paris. He prints many historical plans, but the chief value of his book is in its practical side. It is concerned mainly with the modern informal class to which practically all our parks belong.

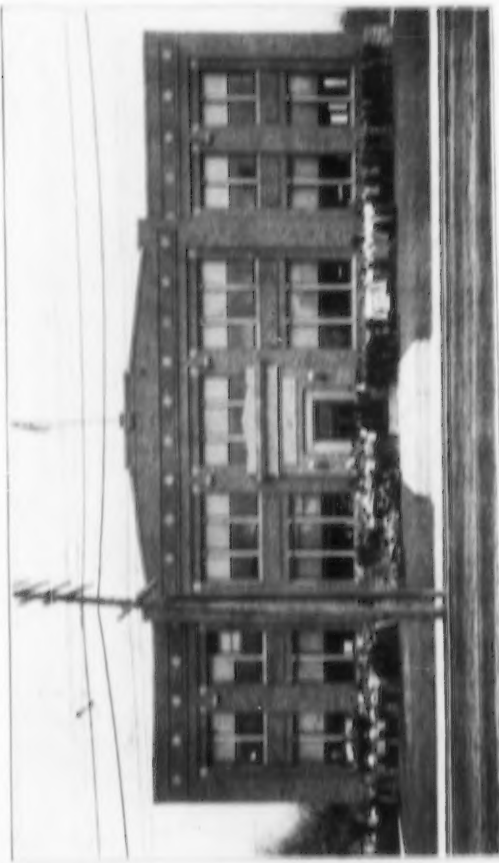




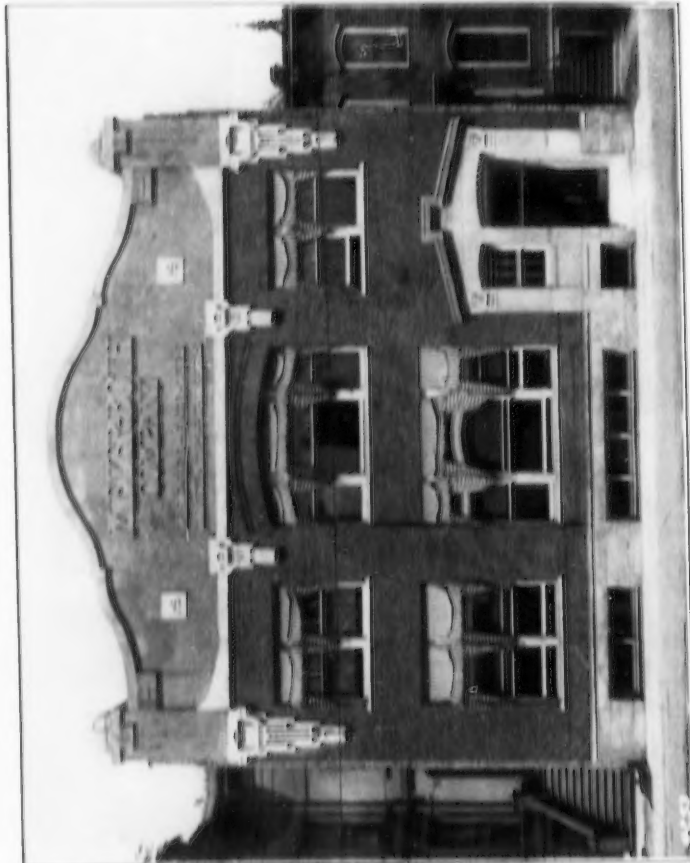
TOMB AT LAKE FOREST CEMETERY, LAKE FOREST, ILL.  
James Gamble Rogers, Architect.



SAWIN MEMORIAL HISTORICAL BUILDING, DOVER, MASS.  
Philip B. Howard and Walter P. Henderson, Associated, Architects.



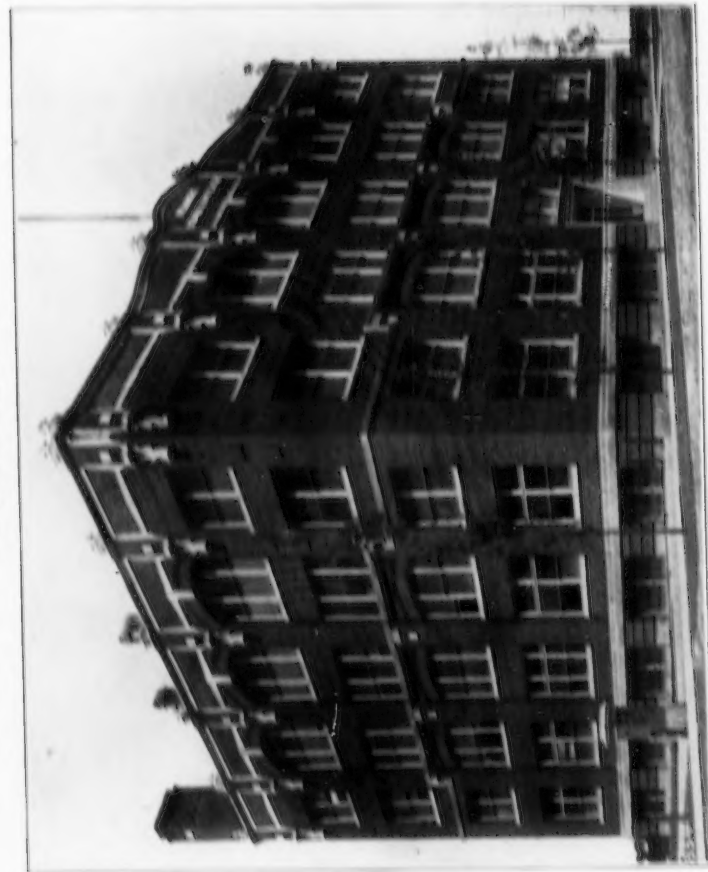
FACTORY FOR HENDERSON LITHOGRAPHING COMPANY, CINCINNATI, OHIO.  
Terry & Lee, Architects.



TWO MANUFACTURING BUILDINGS AT CHICAGO.  
Hill & Walbridge, Architects.



HOME OF THE INDIANAPOLIS STAR, INDIANAPOLIS, IND.  
Vonnegut & Bohn, Architects.



## Little Wenham Hall.

EDITOR OF THE BRICKBUILDER.

Dear Sir:—In making an extensive search through the various libraries of the country for interesting pictures of brickwork I have encountered numerous references to "Little Wenham Hall" in Suffolk, England, in which a number of writers have commented in a very interesting way on the brickwork.

Singularly enough, however, I have been unable to find a photograph of this building in any of the eastern libraries, and thinking that it might interest your readers I sent a photographer to the building and obtained two fairly good photographs, one at small scale, and one taken at close range showing the brickwork in detail. If you care to do so I should be pleased to have you publish these pictures.

In "Domestic Architecture in the Middle Ages", T. Hudson Turner, I found the following description:

"The history of this building is involved in great obscurity. In the year 1281 the manors of Great and Little Wenham of Stamford, County Suffolk, were held by Petronilla de Holbrok. The estate of Little Wenham was subsequently the seat of the family of Brews, whose descendants possessed it in the reign of Henry VIII. The material of the walls of this house is chiefly brick mixed at parts with flints. These bricks are



LITTLE WENHAM HALL, SUFFOLK, ENGLAND.



DETAIL, LITTLE WENHAM HALL.

mostly of the modern Flemish shape, but there are some of other forms and sizes, bearing a general resemblance to Roman brick or tiles. The color of the bricks varies considerably. The buttresses and dressings are of stone. The plan is a parallelogram with a square tower at one angle, on the outside the scroll molding is used as a string and it is continued all round, showing that the house is entire as originally built. The ground room is vaulted with a groined vault of brick with stone ribs which are merely chamfered; they are carried on semi-octagon shafts with plainly molded capitals. The windows of this lower room are small plain lancets widely splayed internally."

Very truly yours,

J. PARKER B. FISKE.

(Fiske & Company, Inc.)

## Combination Life Rail and Surface Drainage Overflow for Plunge Baths.

A VALUABLE invention in the form of special shaped enameled bricks, which furnish a combination life rail and surface drainage overflow for plunge baths, has been very generally adopted in recent work. The ideas expressed and developed in the design were conceived and worked out for the purpose of eliminating many vital objections and faults which are commonly found in almost every plunge bath which has been built. By the use of these special shaped bricks a complete and efficient surface drainage system is obtained which removes all scum, dried skin, saliva, and other floating matter from the surface of the water, and prevents the accumulation

of this objectionable matter on the sides of tank, thus reducing to a minimum the necessity of cleansing. Dirt from the feet of observers mixed with drippings from bathers—a common nuisance in most plunge rooms—is by capillary attraction diverted into the gutters which extend around the tank, while the overflow of the tank serves to carry the soiled water in the gutters off through the drainage outlets.

One of the especially valuable features of this invention is the life rail, which is formed at the water's edge by the use of the brick. The rail so formed is much more convenient and practical than festooned life



ropes, or rigid bronze railings which are usually placed high up to prevent interference with the swimmer. It is helpful to the nervous beginner, as he does not have to reach high out of the water, which action has a tendency to force the body under water. It has the advantage over the metal rail in not interfering in any way with the diver. The cap courses can be made vertically flush with the life rail if desired. The life rail is a help to the swimmer in getting out of the tank, and if need be it is a convenient place in which to expectorate.

Fig. 1 shows the life rail, gutter, and quoin finish cap course.

Fig. 2 shows in sections A and B how easily the distance between water level and floor line can be varied to suit special requirements. The nearer together these are the more ideal are the conditions, including greater ease in getting out of the tank.

A cap course of marble may be used if preferred, and is advisable as it can be furnished with fine fluting or corrugation not practical in enameled brick. Furthermore with marble the thickness of cap course, from rabbet to the top, may be made less than with brick. Thickness of overhang must be slightly in excess of

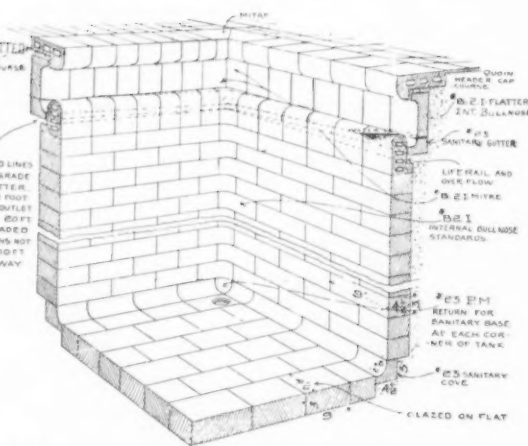


FIG. 1. PERSPECTIVE OF CORNER OF PLUNGE.

It may be observed that the removal from the surface of all impurities by this arrangement makes the bath look far more inviting, whereas under the old methods surface impurities are only removable by emptying the

tank, by which process they are deposited on the sides and bottom of the tank, which have to be washed off with a scrubbing brush and hose—this in turn throwing the whole tank system out of commission for a considerable time. Furthermore the dirt and scum once having been allowed to dry on the surface of the tank require considerable effort to remove it, and this leads to

the use of rough cleansing materials which ultimately tend to dull the face of the lining.

THE natatorium in the Phipps Building, Pittsburg, Grosvenor Atterbury, architect, illustrated in the plate form of this issue, has a Guastavino glazed tile ceiling over the swimming pool. The span of the ceiling arch is about fifty feet, the length about one hundred and twenty-five feet. The color scheme is cream white and green, the border tile being in a dull mat glaze, with panels in corrugated tiles of a more lustrous green. Guastavino tiles are used in the steam-rooms, rest-rooms, lavatories, galleries, etc.



PLUNGE BATH IN Y.M.C.A. AT STAMFORD, CONN.

Equipped with life rail, surface drainage and sanitary gutter combination in enameled brick. Tracy, Swartwout & Litchfield, Architects.

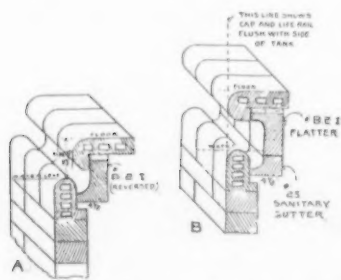


FIG. 2. SECTIONS A AND B SHOWING HEIGHTS OF FLOOR ABOVE WATER LEVEL OBTAINED BY USING ONE OR MORE COURSES OF STANDARD OR FLAT STRETCHERS ABOVE SANITARY GUTTER.

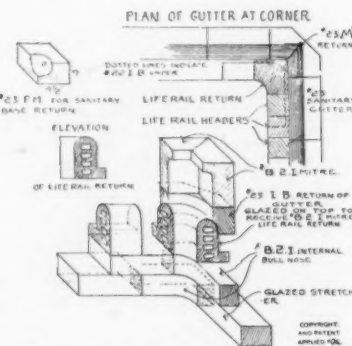


FIG. 3. PERSPECTIVE PLAN OF GUTTER AT CORNER.



## Editorial Comment and Miscellany.

THE Council of Fine Arts held its first meeting in Washington, February 9. Of the thirty members composing the council, twenty-six were present. In organizing, Mr. Trowbridge, of Trowbridge & Livingston, was elected chairman, and Mr. James Rush Marshall, of Hornblower & Marshall, was chosen secretary. Various sub-committees were formed, so that questions submitted to the council by the president or his cabinet officers may be considered by those familiar with special subjects, and then presented to the entire council for action. Under the established custom, whereby the orders of one president remain in effect until changed or rescinded by another, the council will continue to exist after Mr. Roosevelt's departure from the White House. Already Mr. Taft has shown his sympathy with its object and work. The most important action of the council at its initial meeting was to report strongly in favor of locating the Lincoln Memorial at the extreme western end of the Mall, where it was first designed to be placed by the Senate Park Commission's Plan.

### A STATE Art Commission for New



DETAIL BY J. WALTER STEVENS, ARCHITECT.  
Winkle Terra Cotta Company, Makers.



WHITE BUILDING, SEATTLE, WASH.  
White mat glazed terra cotta, executed by Atlantic Terra Cotta Company. Brick furnished by Hydraulic Pressed Brick Company.  
Howells & Stokes, Architects.

York is provided for in a bill recently introduced into the legislature. The commission is to be composed of eleven members: The governor, the presidents of the Albright Art Gallery of Buffalo; the Albany Historical Society; the Metropolitan Museum of Art, and the Brooklyn Institute of Arts and Sciences; the com-

missioner of education, and five persons to be appointed by the governor — including one painter, one sculptor, and one architect, and two other persons not members of any branch of the profession of fine arts—from lists to be supplied by the Fine Arts Federa-



DETAIL BY FRANCIS H. KIMBALL, ARCHITECT.  
New York Architectural Terra Cotta Company, Makers.

tion of New York, the Central New York Chapter, and the Buffalo Chapter of the American Institute of Architects.

The term of office is to be three years, except in the case of the first members of the commission, whose terms are to be fixed by lot at one, two, and three years. They are to receive no compensation other than reimbursement for expenses.

IT HAS been estimated that the amount of wood annually consumed in the United States at the present time is twenty-three billion cubic feet, while the growth of the forest is only seven billion feet. In other words, Americans all over the country are using more than three

times as much wood as the forests are producing. The figures are based upon a large number of state and local reports collected by the government and upon actual measurements.

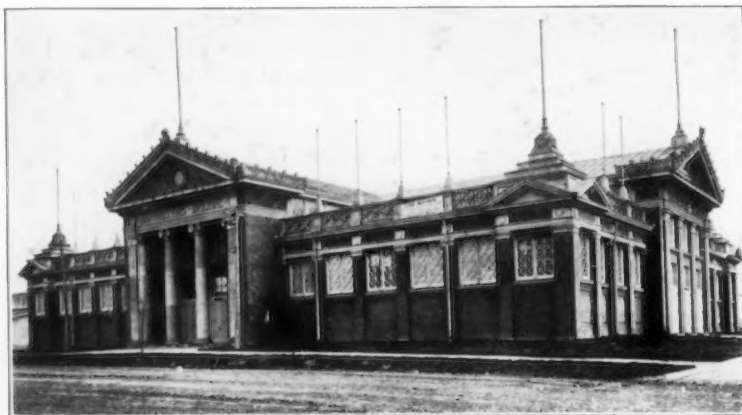
HARVARD UNIVERSITY offers to members of the associate societies and to the individual members of the Architectural League of America, three scholarships in architecture for special students. The scholarships will be forwarded to those who stand highest in a competition in architectural design to be held in May. The competition will be conducted in the various cities by the League through the organizations affiliated with it; on a program prepared by the architectural department of the Harvard University, and will be judged by

the professor of architecture in the university and a Boston architect selected by the League. These scholarships entitle their holders to free tuition in Harvard University for one year. The cost of such tuition otherwise is \$150 per year. If the number of candidates and the quality of the work done in the competition should warrant such

action, the department of architecture of Harvard University will recommend to the authorities the award of similar scholarships to the two competitors standing next highest on the list to the successful ones. Candidates should notify Emil Lorch, chairman of the Committee on University Fellowships, Architectural League of America, Ann Arbor, Michigan, by April 10 of their intentions to take part in the competition.

**A** JAPANESE Commission appointed for the purpose of studying the effects of earthquakes upon buildings has recommended a system of channeled and fitted bricks. It also endorses the method of thickening the walls with a concave curve at the base, resembling the roots of a tree as they grow into the trunk. The latter scheme has been tried with success in southern Italy.

**A** NUMBER of American women have subscribed \$25,000 for the competition of the Paris Prize to be held by the New York Society of Beaux Arts Architects. The income will send a student to the Beaux Arts every three years. The winner in the



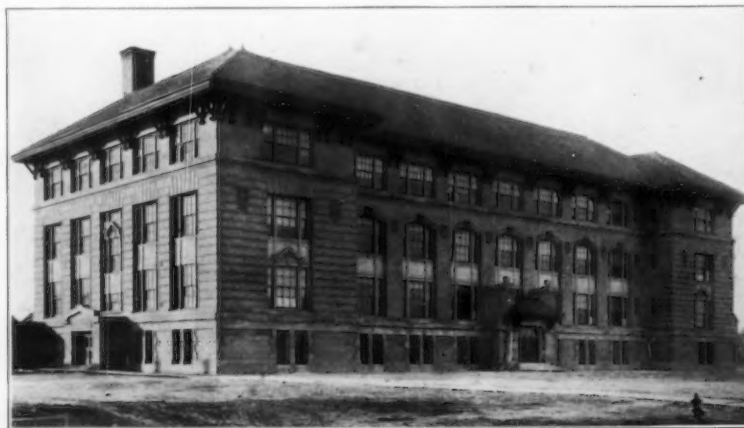
MANUFACTURERS' BUILDING, MINNESOTA STATE FAIR GROUNDS.

Built of pink face brick, made by Twin City Brick Company.  
Clarence H. Johnston, Architect.



FACTORY OF THE NILSON MACHINE COMPANY, BRIDGEPORT, CONN.

Walls built of terra cotta hollow tile of warm rich orange tones, made by Henry Maurer & Sons.  
Meloy & Beckwith, Architects.



PUBLIC SCHOOL, CHICAGO.

Built of "Shawnee" brick, made by Ohio Mining & Manufacturing Company. Furnished by Thomas Moulding Company, Chicago.  
Dwight H. Perkins, Architect.

competition is to receive \$250 quarterly for two and a half years. The subscribers of \$5,000 each are: Mrs. Goelet, Mrs. Harry Payne Whitney, Mrs. Auchmuty, Mrs. W. K. Vanderbilt, and Mrs. Alex. G. Cochran. The preliminary competition, open to every American, was held March 13 at 36 East Twenty-second street, New York.

**T**HE passage of what is known as the commissioner's bill at Washington provides for the supervision of the building and loan associations of the District of Columbia by the Comptroller of the Currency. "This gives the thousands of depositors the protection and advantage of governmental supervision for the first time," declares Commissioner Macfarland.

**G**REAT activity in building is to be observed among the colleges of the country. Marquette University has announced

a plan for centralizing its now scattered buildings. An engineering building to cost about \$200,000 will be started within six weeks. A law building to cost \$100,000 will follow, and later a gymnasium. . . . A bill pending

in the Minnesota legislature carries an appropriation of \$300,000 for the purchase of a tract of fifty acres to be added to the present campus of the University of Minnesota. Upon this ground is to be located the new men's building, for which \$250,000 is now available. The regents will signalize their "greater campus" scheme by putting into effect a large pro-

gram of construction. The legislature has been called upon for more than \$1,000,000 to be devoted to the erection of new buildings, and it is hoped that several times that amount may be spent on improvements within the next five years. Mr. Cass Gilbert has been retained to supervise the work of beautifying the campus and effecting a new alignment of the buildings. . . . At the University of Michigan a men's dormitory seems now assured. It is being planned six stories in height and to house three hundred students. A commons building is also being projected for the near future. . . . The University of Virginia has retained Warren H. Manning, the Boston landscape architect, to carry out, as far as may now be possible, the original design of Jefferson's for the development of the natural and artificial features of the campus. . . . The fund for the Harper Memorial Library at the University of Chicago has been completed, and there is now on exhibition, in the office of Shepley, Rutan & Coolidge, a plaster model showing this and other neighboring buildings as the group will appear when completed. . . . The University of Maine is about to dedicate its new



A FIREPLACE IN THE GAINSBOROUGH STUDIO, WEST 59TH STREET, NEW YORK CITY.

Built of "Tapestry" bricks and tiles which range in color from Indian red through varying shades of brown, purple, olive, and blue. Fiske & Company, Inc., Makers. Charles W. Buckham, Architect.

ing quarters, and extensive commons. It will accommo-



GROUP OF APARTMENTS, CHICAGO.

Faced with wire cut dark red brick, made by Western Brick Company, Danville, Ill. Borst & Hetherington, Architects.



RAILWAY DEPOT, NEWBURG, OHIO.

Roofed with Imperial Spanish red tile, made by Ludowici-Celadon Company. R. Trimble, Architect.

Hall of Agriculture. . . . Williams College has received the gift of a large tract of land, and from another donor a sum of money for improving this property for the purposes of intramural sport.

ONE of the finest appointed municipal lodging houses in the world was the one opened in New York a few weeks ago. It is equipped with electric elevators, shower baths, fumigating retorts, immaculate sleep-

men. By eleven o'clock of the evening on which it was thrown open three hundred and eighty-three persons had registered. THE plaza of the new Union Station at Washington is to be ornamented by the Columbus Memorial Statue and large architectural fountain for which Congress appropriated \$100,000. The modeling of the statue has been awarded to Lorado Taft, who is a relative of the President.

THE State Association of Architects has been formed in Pennsylvania. The association comprises delegates from the Chapters of the American Institute of Architects in the state. D. Knicker-



backer Boyd of Philadelphia was elected president, and William L. Baily, secretary and treasurer. Among the topics considered by the association at its first meeting, which was held at Harrisburg on February 23, was the revision of the building laws and the registration of architects.

#### IN GENERAL.

Mrs. W. K. Vanderbilt, Sr., has donated something over \$1,000,000 for the erection of four model tenements for persons suffering with tuberculosis.

City Engineer Darnell of Kansas City has been studying the various methods by which large cities dispose of their sewage, and declares that of Columbus, Ohio, the largest and best in the country.

The Ethical Culture Society of New York has commissioned Robert D. Kohn to design a new hall to be built at Central Park, West and Sixty-fourth streets.

As recently as 1908 there were in use in Kentucky as many as four thousand five hundred two years old log cabin schoolhouses.

The American Institute of Architects, through its secretary, Glenn Brown, the Octagon, Washington, D. C., has issued a circular in which is given the revised schedule of charges as recorded by the convention which was held at Washington in December.

The municipality of Pau, France, has erected a beautiful building for the Wright Brothers, and thus architecture has come to serve aerial navigation as it already provides the termini of every other form of navigation and transportation. The new building is 70 by 50 feet and contains, besides six bed rooms and a kitchen, enough space for two aeroplanes.

At a Vassar College luncheon in New York a few weeks ago, Sir Caspar Purdon Clarke told how the Metropolitan Museum was steadily to enlarge to six times its present size. It will then occupy twenty acres of



MAT GLAZE FAIENCE WALL FOUNTAIN,  
NAVAL V.M.C.A., NORFOLK, VA.  
Modeled by Francis G. Plant, executed by  
Hartford Faience Company.  
Louis Jallade, Architect.



V.M.C.A. BUILDING, INDIANAPOLIS, IND.  
Terra cotta trim, made by Indianapolis Terra Cotta Company. Walls  
faced with Hydraulic-Press Brick.  
Foltz & Parker, Architects.



DETAIL BY GEORGE ROOSEN, ARCHITECT.  
New Jersey Terra Cotta Company, Makers.

ground in Central Park. The money for this expansion is steadily coming in, and Sir Caspar declared that patience was all that was necessary to see the construction of the largest art museum in the world.

The Columbus Society of Architects, Columbus, Ohio, has petitioned Congress to approve and adopt the site selected by the Burnham Commission for the Lincoln Memorial at Washington.

The firm of Lohman & Place, architects, Seattle, Wash., has been dissolved. George Lohman will continue the practice at the same address, 16 Hancock Building.

The preliminary examinations for the Rotch Traveling Scholarship will be held at the office of the secretary, C. H. Blackall, 20 Beacon street, Boston, on Monday and Tuesday, April 12 and 13, to be followed by the sketch for competition in design on Saturday, April 17. The successful candidate receives \$2,000, to be expended in foreign travel and study during age, and have been engaged in professional work during two years in the employ of a practising architect resident in Massachusetts.

George Lawrence Smith has opened an office for the practice of architecture at 22 Congress street, Boston.

Charles G. Badgley, architect, Seattle, Wash., has removed his office to the White Building.

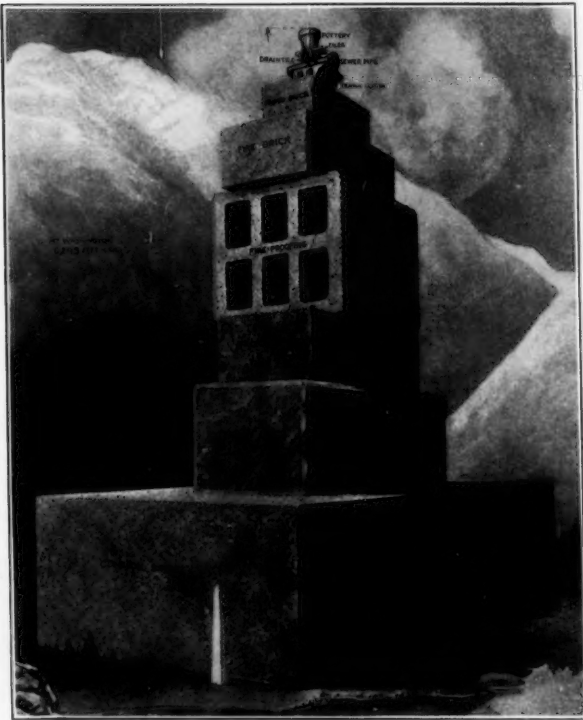
Potter & Lundberg, architects, Tacoma, Wash., have dissolved copartnership. C. F. W. Lundberg retains the present offices in the Provident Building. Mr. Potter has formed a copartnership with A. P. Merrill, under the firm name of Potter & Merrill, office 317 Provident Building. Manufacturers' samples and catalogues desired.

W. E. Nelson, architect, has opened an office in the Shupert Building, San Angelo, Texas. Manufacturers' samples and catalogues desired.

## SPECIAL SHAPED BRICK FOR PLUNGE BATHS.

THE special shaped bricks used in forming the life rail, cap course, and gutter for plunge baths, illustrated and described on another page of this issue, are the invention of the American Enameled Brick & Tile Co. of New York. These bricks have already been used in baths for the Y.M.C.A. at Stamford, Conn., Tracy, Swartwout & Litchfield, architects; Sailors' Home, New York City, Boring & Tilton, architects; Racquet and Tennis Club at Cambridge; Willard School, Troy, N. Y., M. T. Cummings & Sons, architects; Episcopal Guild Hall, Marquette, Mich., Carleton & Kuenzli, architects.

We reproduce here an illustration which appeared on



CLAY PRODUCTS OF THE UNITED STATES.

The pyramid of burned clay would be 4,294 feet high and represent a value of \$158,942,369.

**WANTED.** — Draftsman — married — American — of more than ten years' experience in first-class offices, desires position and working interest in business with a reliable architect, in a thriving city of Illinois, Indiana, or Ohio. A position where integrity, industry, and conscientious efforts will be appreciated. Good designer, detailer, practical, systematic, and well educated. Address, W. F. C., Care The Brickbuilder.

**WANTED.** — First-class draftsman who has had experience. Graduate of an architectural school preferred. One whose talents would enable him to become head draftsman in a short time. Write stating experience and salary expected. Wetherell & Gage, architects, 202 Youngerman Bldg., Des Moines, Ia.

**WANTED.** — Competent architectural draftsman — six years' experience at design, detail, superintendence, and estimates, desires position as draftsman or assistant manager. Best of references as to ability and character. West preferred. Address, Richmond, Care The Brickbuilder.



KESSNER BUILDING, CHICAGO.

Terra cotta exterior, executed by Northwestern Terra Cotta Company. Jenney & Mundie, Architects.

the first page of the *Scientific American* for January 30, giving a graphical comparison of the magnitude of clay products for the year 1907.

The total value (probably estimated) is given as \$158,942,369, divided up as follows:

	Quantity.	Value.
Common brick .....	9,795,698,000	\$58,785,461
Vitrified paving brick .....	876,245,000	9,654,282
Front brick .....	585,943,000	7,329,360
Ornamental brick .....		361,243
Enameled brick .....		918,173
Fire brick .....		14,946,045
Stove lining .....		627,647
Drain tile .....		6,864,162
Sewer pipe .....		11,482,845
Architectural terra cotta .....		6,026,977
Fireproofing .....		3,162,453
Hollow building tile or blocks .....		1,088,165
Tile, not drain .....		4,551,881
Miscellaneous .....		3,000,201
Pottery .....		30,143,474

## "Recent English Domestic Architecture"

Edited by MERVYN E. MACARTNEY

36 pages of text                      118 photographs of houses  
164 pages of illustrations        67 photographs of interiors  
58 plans

The illustrations are accompanied by the plans and in many cases by photographs of the interiors, also by concise descriptive notations on each home.

Bound in strong, green buckram binding, size 8 3/4 in. by 12 1/4 in. Sent on receipt of price. \$2.50, express prepaid.

Importer, Dealer                      **M. A. VINSON**                      205 Canton Building  
Books on Architecture                      Cleveland, Ohio



## COMPETITION FOR A HOUSE.

To be built of Terra Cotta Hollow Tiles at a cost not exceeding  
\$10,000.

FIRST PRIZE \$250., SECOND PRIZE \$150., THIRD PRIZE \$100.

### PROGRAM.

THE problem is a house with walls, floors, and partitions built of Terra Cotta Hollow Tiles.

The cost of the house, exclusive of the land, is not to exceed \$10,000.

A detailed statement of costs must accompany each design, this statement to be typewritten on one side only of a sheet of paper measuring 11 inches by 8½ inches.

Designs which in the opinion of the jury call for a house which would cost more than the amount named to execute will not be considered.

The particular object of this Competition is to encourage a study of the possibilities in the use of Terra Cotta Hollow Tiles in the exterior walls of houses. Here is a material which is durable, economical in original cost and construction, desirable in its weatherproof qualities, and one which is capable of meeting the esthetic demands of the designer. Its largely increased use, especially in the eastern section of the country, is evidence of its popularity as a building material which has passed the experimental stage.

The plan should provide accommodations for a family of five — three adults and two children — and two servants. There are no restrictions as to size, shape, or style of house — except the cost — nor the size, shape, or location of lot.

### CONSTRUCTION.

While the method of construction for walls, floors, and partitions is to be determined by the designer, the following suggestions are offered as being practicable and admissible.

*First.* Outside walls may be of Terra Cotta Hollow Tiles eight inches thick (12 inches by 12 inches by 8 inches), the blocks being heavily scored on two sides. Stucco may be used for an outside finish and plaster applied direct to the block for interior finish.

*Second.* Outside walls may be of Terra Cotta Hollow Tiles ten or twelve inches thick with same finish as suggested above.

*Third.* The outside walls may be faced with brick, with a backing of eight inch tiles.

*Fourth.* The outside walls may be built with outer and inner walls, with an air space of two inches between, using in the outside wall a four inch hollow tile, and on the inside a six inch tile. The treatment of the face of such a wall, and the manner of bonding the outer and inner walls are left to the designer.

For the floors, one of the long span hollow tile terra cotta block systems now on the market, which are adapted up to spans of twenty feet without the use of steel beams, or a system which employs hollow tile terra cotta blocks in connection with light steel construction. The roof need not be of fireproof construction.

### DRAWINGS REQUIRED.

On one sheet the front and a side elevation at a scale of four feet to the inch; also plans of floors at a scale of eight feet to the inch. On another sheet details showing clearly the scheme of construction for the exterior walls, the floors and partitions, together with other details drawn at a scale sufficiently large to show them clearly. Graphic scales to be on all drawings.

The size of each sheet is to be exactly 36 inches by 24 inches. Strong border lines are to be drawn on both sheets one inch from edges, giving a space inside the border lines 34 inches by 22 inches. The sheets are not to be mounted.

All drawings are to be made in black line without wash or color. All sections shown are to be cross-hatched in such manner as to clearly indicate the material, and the floor plans are to be blocked in solid.

Each set of drawings is to be signed by a *nom de plume* or device, and accompanying same is to be a sealed envelope with the *nom de plume* on the exterior and containing the true name and address of the contestant.

The drawings are to be delivered flat, or rolled (packaged so as to prevent creasing or crushing), at the office of THE BRICKBUILDER, 85 Water street, Boston, Mass., on or before June 1, 1909.

Drawings submitted in this Competition are at owner's risk from time they are sent until returned, although reasonable care will be exercised in their handling and keeping.

The designs will be judged by three well-known members of the architectural profession.

In making the award the jury will take into account: first, the fitness of the design in an artistic sense to the materials employed; second, the adaptability of the design as shown by details to the practical constructive requirements of burned clay; third, the relative excellence of the design.

The prize drawings are to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned, except the prize drawings, may have them by enclosing in the sealed envelopes containing their names ten cents in stamps.

**For the design placed first there will be given a prize of \$250.**

**For the design placed second a prize of \$150.**

**For the design placed third a prize of \$100.**

In the study of this problem competitors are invited to consult freely with the manufacturers of burned clay fireproofing, or their agents. This Competition is open to everyone.  
The prize and mention designs will be published in THE BRICKBUILDER.